Auxiliary Heat for Turkey Farm . . . . . Pg. 17

AIR CONDITIONING HEATING & REFRIGERATION NEWS
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Knoxville Residential Sales

Heat Pumps Pace Gain of 22%

By C. Dale Mericle

KNOXVILLE, Tenn. — Paced by the heat pump, sales of residential air conditioning here reached a new high during the 1960 season.

Sales of central residential systems by nine contractors and two distributors totaled 545 this year, representing a gain of 22% over the 1959 total of 447 and a jump of 55% over the 1958 figure of 352.

Included in the 1960 total are 423 residential heat pump installations, it was determined in the annual on-the-spot survey made here by AIR CONDITIONING, HEATING & REFRIGERATION NEWS. There were 290 such heat pump systems installed during 1959. (Results of the 1959 Knoxville survey were published in the April 4, 1960 issue.)

The NEWS figures are believed to represent at least 80% of the total residential cooling installations made in the Knoxville area. The contractors and distributors listed in the 1960 survey are the same ones who contributed sales data in 1958 and 1959.

A detailed breakdown of these firms' activities in the fields of residential and commercial air conditioning and heating is presented in the accompanying table.

Although the over-all total residential air conditioning sales were up considerably this year, gains in this category were noted by only two contractors and one distributor. Some loss as compared with 1959 sales was noted by three contractors, while the rest—four contractors and one distributor—indicated their sales were

(Continued on Page 37, Col. 1)

NCRSA Announces Meeting Program For New Orleans

NEW ORLEANS — Complete program for the 14th annual convention of the National Commercial Refrigerator Sales Association was released recently by Marie Lawton, executive secretary.

The convention will be held Nov. 27-29 at the Royal Orleans hotel here. Theme is "Successful Selling in a Changing Market."

SUNDAY, NOV. 27

9:30 a.m.—Board of directors' meeting.

2 p.m.—Joint Relations Committee meeting.

6:30 p.m.—Early Birds' Reception and Get Together.

MONDAY, NOV. 28

9:30 a.m.—Convention called to order by President Ray H. Winther.

(Continued on Page 4, Col. 5)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Dr. Willard's Memorial

Perhaps no educator in history advanced the cause of heating and air conditioning more than did late Arthur Cutts Willard of the University of Illinois.

Our industry is loaded with engineers who studied under Dr. Willard, and who assisted in the research projects he pioneered with grants from heating and air conditioning associations.

In his memory a Willard Lectureship and Scholarship Fund is being established under the direction of Dr. Roger Adams, assisted by Prof. M. K. Fahnestock and Mr. A. J. Janata, Executive Assistant to the President of the U. of I.

Tax deductible contributions can be made directly to the Willard Fund, University of Illinois Foundation, Room 224, Illini Union, Urbana, Illinois.

Alumni! He helped you! Rally 'round and help a new generation of young men carry on and become credits to the heating and air conditioning profession!

Changing Times

Men in the 50 to 65 age bracket are finding jobs much more easily than they did several years ago, the National Association of Manufacturers observes.

In a special report on "Employment of Mature Workers," the NAM reveals that spot surveys in many parts of the nation have shown that the numbers of "over 50s" being hired nowadays have increased strikingly.

"Employer acceptance of mature men has been increasing, and pension plan difficulties have been resolved, or discovered to be of less importance than once believed," the NAM report continues.

"Employers are realizing that men between 50 and 65 frequently are in their best years because of the knowledge and judgment they have gained through experience.

"The practice of analyzing the requirements of specific jobs and matching them with the best

(Continued on Page 12, Col. 1)

Kirby Is Airtemp Marketing V. P.

DAYTON—Thomas W. Kirby has been appointed vice president-marketing for Chrysler Corp.'s Airtemp Div., it was announced by Paul M. Augenstein, Airtemp president.

T. W. Kirby

Kirby will report directly to the president. Augenstein emphasized that the new position takes the place of the former position of vice president of sales and encompasses the complete marketing function of the division.

Kirby will place particular emphasis on the expansion and strengthening of Chrysler Airtemp's nationwide dealer and distributor organization and the development of new consumer-oriented merchandising programs, it was stated. He joined Airtemp last April as special markets manager.

RACCA Convenes In Miami Beach Nov. 19 to 22

MIAMI BEACH, Fla.—Complete program of the 15th annual convention of the Refrigeration & Air Conditioning Contractors Association was announced recently.

The convention will be staged at the Hotel Fontainebleau here Nov. 19-22.

In addition to the speakers and management seminar previously announced the program calls for a talk on "Hermetic Trends and Service Requirements" by J. J. Floreth, vice president and director of service of York Div., Borg-Warner Corp., and a showing of five

(Continued on Page 39, Col. 4)

Cooling Sales Booming In So. California

SAN DIEGO, Calif. — More than 19,000 tons of air conditioning were sold in San Diego county during the first eight months of 1960 for a total of $13,913,000, approximately 35% of it in heat pumps, reports Fred A. Clarke, coordinator for the Air Conditioning Div., Bureau of Home Appliances of San Diego County.

From nearby Los Angeles, Certified Refrigeration & Air Conditioning Foundation reports a backlog of almost four months in air conditioning system installations. Members predict an 11.7% increase in 1961.

The San Diego report indicates that 11,872 tons of commercial and 7,359 tons of residential air conditioning were sold from Jan. 1 to Sept. 1.

To stimulate continued activity, the Air Conditioning Div. has been conducting a "Fall-Winter Air Conditioning" advertising campaign aimed at residential building contractors and the general public.

General theme is on the year-

(Continued on Back Page, Col. 5)

Membership Record Set By RSES

2,957 Added Since '58 Bring Total to 12,634

PORTLAND, Ore. — Refrigeration Service Engineers Society now has the largest number of members in its 27-year history, H. T. McDermott, secretary, reported at the group's 23rd annual convention here recently.

As of June 30, 1960, the end of the RSES fiscal year, the society had on its rolls 12,634 members, a growth of 2,957 members since 1958, McDermott said. This makes it the largest educational group in any association in the refrigeration and air conditioning field, he said.

More than 500 refrigeration service engineers, educators, technicians, and sales representatives from all parts of the United States and Canada at-

(Continued on Page 4, Col. 1)

Windsor Explosion Results In Suspension Of Contractor's License

WINDSOR, Ont., Can. — The recent tragic gas explosion in a downtown variety store that killed 10 persons and sent 89 to the hospital has resulted in the suspension of the business licenses of Jessop Plumbing & Heating Ltd. and of its owner Charles Ingram, who was himself injured in the blast.

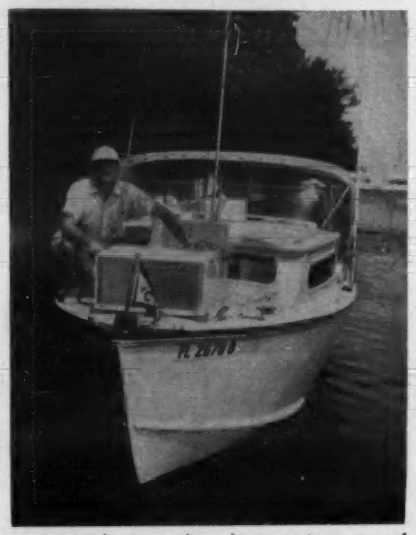
Robert Macaulay, Ontario minister of energy resources, after a quick personal investigation, ordered the suspension and declared that "in my opinion, the blast would not have occurred had department regulations been followed to the letter."

The Jessop firm was bringing gas from the main into the store in order to convert a coal furnace to natural gas.

First Lady

MRS. CHRISTINE WARRINGTON, secretary, Conditioned Air Co., the first woman to successfully complete the 12-week training program in conjunction with the Silver Shield Program of the National Warm Air Heating & Air Conditioning Association, received her certificate at the launching of the Memphis Indoor Comfort Bureau here recently. Making the presentation was Fred M. Niell of Memphis Light, Gas & Water Div. who was the chief instructor and is chairman of the Indoor Comfort Bureau's Standards Committee.

No Hot Nights on this Boat



SPORT FISHING enthusiast Robert McK. Peck, of Fort Lauderdale, Fla., recently solved the problem of living aboard his boat during weekend fishing trips in the western Bahamas, despite hot tropical nights, by installing a standard Amana room air conditioner. Peck added handles to the unit to make it easy to swing it from the dock, where he leaves it during the day, onto the deck for cooling at night. Peck reports that even on its lowest setting, the Amana air conditioner "does such a terrific job of cooling that we were using sleeping bags in July." He adds that in spite of three months' exposure to salt spray, there is no rust on any of the component parts of the air conditioner.

Bottling and Syrup Room Cooling To Be Topic at Detroit Convention

DETROIT — A discussion on "Bottling & Syrup Room Air Conditioning" will be held during the 42nd annual convention of the American Bottlers of Carbonated Beverages.

The convention and concurrent 1960 Soft Drink Industry Exposition will be staged Nov. 14-17 at Cobo Hall here.

John Shaw of The Coca-Cola Co., Atlanta, will lead the air conditioning discussion. This is scheduled for 9:30 a.m. on Wednesday, Nov. 16, as part of one of three special meetings on subjects of importance to beverage manufacturers.

More than 200 suppliers will exhibit their products and services at the ABCB international exposition. Grand opening is set for noon on Monday, Nov. 14. Entrance to the exposition will be restricted to those identified by badges secured when registering.

The convention will open at 10:30 a.m. on Tuesday, Nov. 15. The exposition will be opened at 1 p.m. that day, as it will on Wednesday and Thursday. Finale of the events will be the ABCB banquet and entertainment Thursday evening.

Frigidaire Recalling

DAYTON—Frigidaire Div. of General Motors Corp. announced that it is recalling an additional 375 employes.

Herman F. Lehman, GM vice president and head of Frigidaire, said the recall reflects a "favorable sales outlook" and will bring to 900 the total number of employes brought back since early September.

NAPRE Convention Set for St. Louis Nov. 30 to Dec. 2

ST. LOUIS — Golden Anniversary convention of the National Association of Practical Refrigerating Engineers will be held at the Sheraton-Jefferson hotel here Nov. 30 to Dec. 2. NAPRE was founded Dec. 1-3, 1910.

The 51st annual meeting will include 10 educational features, field trips to Anheuser-Busch, Inc. and Merchants Refrigerating Co., displays by industrial members of the association and local manufacturers, and greetings from Joseph Sestric, director of public safety for the city of St. Louis.

Social events will include a visit to Falstaff Inn, entertainment at the Statler-Hilton hotel, annual reception and dinner at the Sheraton-Jefferson, and a special show aboard the Goldenrod Show Boat.

Cutler-Hammer Opens Plant In Belmont Area

MILWAUKEE — Cutler-Hammer, Inc., has begun operations in its new plant in the newly-developed Belmont industrial area.

The plant, which contains more than 35,000 sq ft of floor space, houses the company's manufacturing, sales office, and warehouse activities.

Previously, the electrical firm had manufacturing and office facilities in San Francisco and a warehouse in San Jose, it was noted.

The new plant produces Cutler-Hammer's motor control lines and power distribution equipment.

Trane Reports Sales, Profits Up for Quarter

LA CROSSE, Wis.—Increases in both sales and profits for the third quarter of 1960, compared to a like period in 1959, were reported by The Trane Co.

For three months ending Sept. 30, sales were $27,246,160 with a net profit of $1,900,412, the company reported. This compares to 1959 third-quarter sales of $24,021,388 and $1,678,803 net profit.

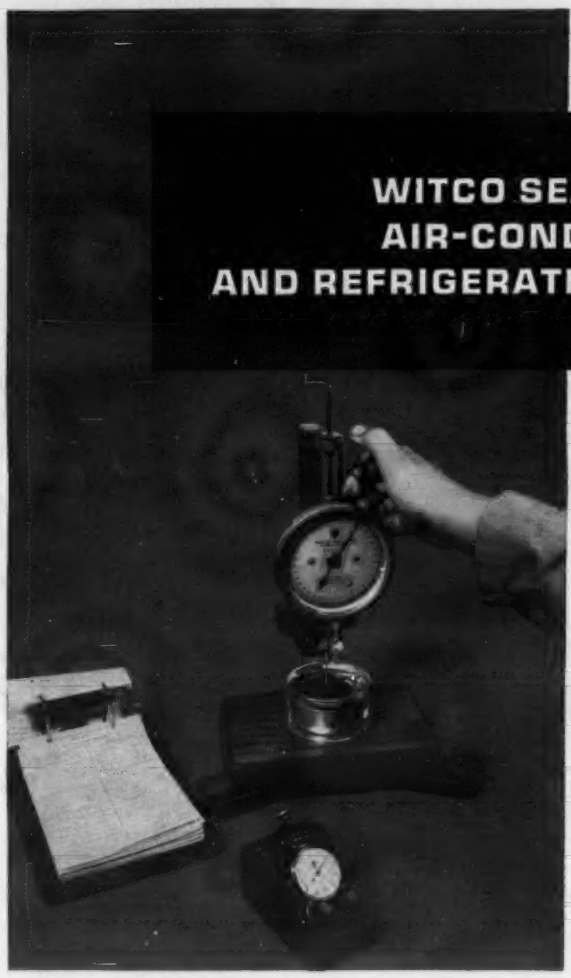
Sales for the first nine months of 1960 were $75,437,719 with $4,488,207 reported in net profit. This compares to sales for the first nine months of 1959 of $62,043,073, and net profit of $3,370,415.

Robert W. Mason Heads Sheet Metal Distributors

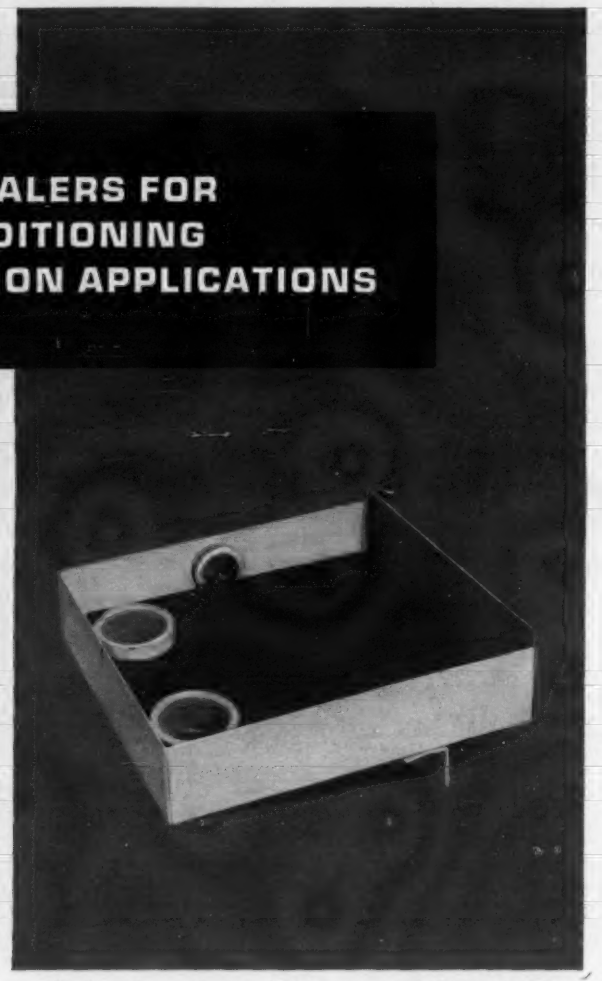
ATLANTIC CITY, N. J. — Robert W. Mason of Toronto was elected president of the National Association of Sheet Metal Distributors during the group's 50th annual meeting here.

Noel E. Girard of St. Paul and Orin J. Lockwood, Jr., of Binghamton, N. Y., were named vice presidents. Elected to the executive committee were Conner Clapp of Louisville, Norman Herr of Newark, and A. M. Roberson of Knoxville.

WITCO SEALERS FOR AIR-CONDITIONING AND REFRIGERATION APPLICATIONS



Careful testing of all Witco products means uniformity and high quality for you. Here, a lab technician checks a sealer with a penetrometer. This and many other tests check every characteristic that is vital to performance. Every sealer shipped must meet Witco's high standards and perform faultlessly for you.



Witco's sealers and vapor barriers are specially designed for air-conditioning and refrigerating applications. Good flexibility and excellent adhesion are exhibited over a wide temperature range (from below freezing to abnormally hot temperatures). Formulations to meet special application requirements are manufactured to customer order.

WITCO PRODUCTS ASSURE TOP QUALITY AND PERFORMANCE

Providing products especially suited to particular jobs is just one way Witco assures top performance. Take Witco's Plastic Sealer 320, for example. This material is an all-purpose sealer used where hard, dry films are required. It is stainless, tasteless, odorless and forms air-tight, positive seals.

Pioneer 14442 is a hot-applied sealer with odor level and moisture resistance that make it ideal for refrigerators, freezers, food-vending machines and water coolers. Pioneer 2205 also can be used in these applications. It is a high-melting-point sealer and retains high cold flow and flexibility at low freezing temperatures; it also assures good adhesion and excellent sealability.

The big reasons behind Witco Products' superiority are research and quality control. Every Witco Product is produced under the kind of strict laboratory quality control that assures uniformly high performance from shipment to shipment, year to year.

Witco's research laboratories and technicians not only develop new and improved products, but are available to help you with special problems. Write or call the nearest Witco sales office listed below for further information about these products and for information on sealers for other specialty applications.

SEE OUR CATALOG IN SWEET'S

WITCO CHEMICAL COMPANY, Inc.
PIONEER PRODUCTS DIVISION
Dept. 84-01, 122 East 42nd Street, New York 17, N. Y.
Sales Offices: New York • Chicago • Los Angeles • Toronto and Montreal, Canada

PHCIB Has Trained Twice as Many as Program Called for, Convention Told

BAL HARBOUR, Fla. — The Plumbing-Heating-Cooling Information Bureau has trained twice the number of contractors in modern selling methods as was called for by its training program.

This significant fact about the Selling Fundamentals course was pointed out by W. A. Fitzpatrick, retiring president of the bureau, in his report at the membership meeting at the Americana hotel here Oct. 23.

A progress report estimated that between 2,500 and 3,000 trainees will have completed the program or be enrolled by the end of January, 1961.

The bureau's program of carrying the story of the industry to the public and training contractors to sell the products of the industry more effectively will be accelerated in 1961, it was asserted by Lee Martin, new president of the PHCIB. Martin is president of Nibco, Inc., Elkhart, Ind.

Lee Martin

In his report as executive director, Joseph R. Schmitt recommended expansion of the Selling Fundamentals program in 1961.

"It is felt," said Schmitt, "the accelerated activity of the Selling Fundamentals program is necessary so that by the end of 1963, all contractors in the nation will have had an opportunity to attend a class in Selling Fundamentals.

"The industry must take advantage of the great interest of graduates of Selling Fundamentals classes in continued training programs. The bureau staff, with the cooperation of the Sales Training Council, will make a study to determine which follow-up training course will be most beneficial to the industry and PHCIB members.

"The budget for 1961 provides for funds for the development of a follow-up training program. The most often discussed training programs thus far have been a business management course for contractors or some phase of journeyman selling."

Schmitt emphasized the need for the industry to make credit buying of its products easier for consumers. He said that on the day before the meeting, he and Martin had visited a store in Miami Beach and had bought $20 worth of plumbing repair items on credit in two minutes.

"Buying plumbing and heating on easy credit terms should be made as convenient as the buying of tires, gasoline, and other commodities," Schmitt declared. "To gain wider use of credit buying of our products and services by the consumer is one of the objectives of our Selling Fundamentals Program."

A report on the progress made in the Selling Fundamentals program was prepared by David Braun, director, Sales Development Institute, and was presented in his absence by Schmitt.

Braun said prospects for the training of a large number of qualified men to teach future classes are very good. He said there is every indication that there will be 24 Train the Trainer classes next year and that this will more than double the 230 qualified trainers that the industry will have by the end of January, 1961.

The Selling Fundamentals program is being carried on under the direction of the Sales Training Council. In 1961, Braun explained, the council will also be working toward completion of a Business Management program as a follow-up to the Selling Fundamentals program.

Martin made a special report in which he called attention to the experience of his company with the Selling Fundamentals program.

He said one of his men was sent to attend one of the first Train the Trainer programs in Chicago. This man subsequently taught schools in Elkhart, Fort Wayne, and South Bend at which 42 contractors received their certificates of completion of the course.

"We have found that our sales in the areas in which the Selling Fundamentals course was held have been directly affected. As a matter of fact, our sales in these areas increased by two and one-half times. We attribute this increase to the knowledge of modern selling methods obtained by our customers in this course."

The vast readership of bureau publicity releases was pointed out in the report by Norman J. Radder, editorial director, who estimated that half a billion newspaper readers see bureau releases annually.

Since the cost of maintaining the publicity service of the bureau is approximately $35,000 a year, this means that there are 14,285 readers for $1 or 143 readers for 1 cent.

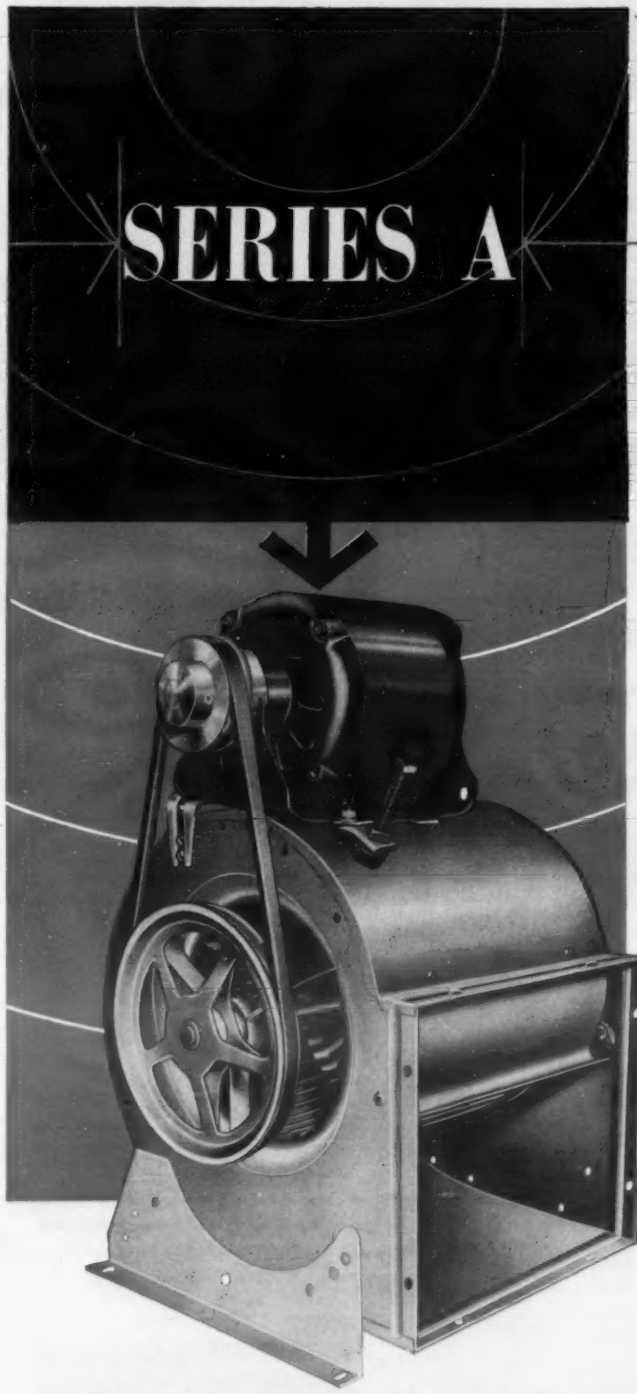
"This," said Radder, "is on the basis of circulation figures. It is obvious, of course, that because of multiple-readership of newspapers, the actual number of exposures to the industry story in newspapers is even greater.

Radder's report included three exhibit pages on which typical releases as published in leading daily newspapers were reproduced. He pointed out that, in addition to the basic release program, the bureau also provides newspapers with special feature material.

Following the conclusion of Radder's report, President Fitzpatrick called on Earl E. Brown, president of The Chicago Faucet Co., and chairman of a special committee to honor Radder in connection with his retirement as secretary and editorial director. Brown presented Radder with a book containing letters from friends and also a check.

In his report on behalf of the Membership Committee, John E. Sommers said that as of Sept. 30, 1960, a total of 1,267 members paid $128,051 in dues and contributions for 1960. Members for 1960 include 169 manufacturers, 540 wholesalers, 473 contractors, and 85 manufacturers' representatives.

John M. Dumser, as treasurer, reported total income for 1960 up to Sept. 30, of $136,874.86 and an estimated surplus of income over expenses for the year of $4,258.85.



"Features exclusive LAU FIRSTS"

Here's the most versatile blower manufactured today! The Lau Series A is extremely efficient in many applications because of its availability in such a complete performance range. Assorted wheel sizes, four standard discharge positions, and a wide selection of C.F.M. characteristics mean you can specify a blower that's practically custom made for you . . . at no extra cost.

Standard Series A features include such Lau exclusives as Preslok® wheels, ground and burnished shafting, Lau Pak Gold Seal bearings, tripod bearing brackets, heavy gauge housing supports, versatile motor mounts, and Lausteel pulleys.

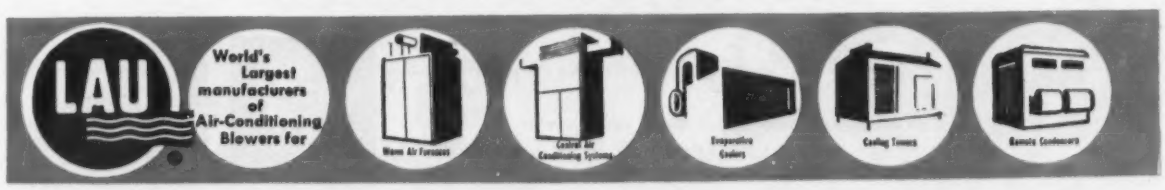
Series A blower assemblies are recommended for warm air furnaces, central air conditioning systems, evaporative coolers, cooling towers, and remote condensers.

Write or call Lau today. We will place you in contact with your experienced Lau Sales Engineer. He's always nearby and ready to help you solve any air moving problem.

MEMBER INDOOR COMFORT

The Lau Blower Company, 2027 Home Avenue, Dayton 7, Ohio.

Other plants in Kitchener, Ont., Can., and Irwindale, Calif.



RSES--

(Continued from Page 1, Col. 5)

tended the society's first convention in the Northwest.

One reason for this large increase in membership, declared John H. Spence, educational director and chairman of the educational examining board, is interest shown in the society's educational program.

More than 3,700 members have now taken the society's three-year study course designed to fullfill the need for trained service personnel.

The course consists of 36 hours of study in elementary refrigeration, commercial refrigeration, and air conditioning. Spence stated that a great many men have joined the RSES from the heating field to learn refrigeration and air conditioning service through the course.

Rudy Berg, president of the Air-Conditioning & Refrigeration Institute, told the conventioneers that 90% of all unitary air conditioners, including residential units, now being offered for sale, display the ARI unitary air conditioner seal of certification.

More than 50 manufacturers have signed contracts to participate in the program administered by ARI to certify the performance of units based on industry-wide testing and rating, he said.

The certification program, now in its second year, provides a simple yardstick for judging the cooling capabilities of a given piece of unitary air conditioning equipment.

Nine educational papers were presented at the convention, covering a wide range of topics.

At the annual banquet, the Atlanta chapter was given the Paul B. Reed Memorial Award for showing the greatest improvement in membership during the preceding fiscal year.

The McIntire Cash Award to the individual member who contributed most significantly to the society for the benefit of the air conditioning and refrigeration industry was presented to K. E. Stookesberry of Inglewood, Calif.

The Reed award honors the memory of Paul B. Reed, for many years the society's educational director. The McIntire award is presented by the Refrigeration Div. of the McIntire Co. of Livingston, N. J.

Society delegates elected Paul Darby of Tacoma, Wash. as president for the coming year.

Other newly-elected officers are Carl Howenstine of Canton, Ohio, first vice president; J. Lawrence Hall of Nashua, N. H., second vice president; Michael Rudka of Oshawa, Ont., Can., sergeant-at-arms; H. T. McDermott of Chicago, secretary; Charles Bell of Fresno, Calif., treasurer; and John Spence of St. Louis, chairman of the educational examining board.

J. Robert Bonebrake of Kansas City, Mo., was newly elected to the board of directors. Re-elected to the board are Carl W. Price of Knoxville, Tenn.; A. J. Lane of Raleigh, N. C.; Lloyd M. Reed of Denver; and Otto Grossman of Newark, N. J.

Wallace Smith of Edgewater, N. J. was named chairman of the publicity committee; Kenneth Franklin of St. Louis, chairman of the safety committee; and Otto Grossman, chairman of the craft recognition committee.

Next year, RSES will hold its convention in Toronto, with the Canadian RSES as host. The Canadian Refrigeration Manufacturers Association will stage an exhibit.

NCRSA Program--

(Continued from Page 1, Col. 2)

Welcome to New Orleans—Glenn P. Clasen, acting mayor, city of New Orleans.

Report of the Secretary—Marie Lawton, executive secretary.

"The Constant Change"—Ray H. Winther, president, Ray Winther Co., South San Francisco, Calif.

"How We Sell Voluntaries and Co-op Groups"—Philip W. Herman, vice president, Allied Store Equipment Co., Minneapolis.

"What Determines Our Equipment Purchasing Policies"—John Schwegmann, Jr., Schwegmann Bros. Giant Super Markets, Metairie, La.

"The Importance of Selling Profits Profitably" — Donald D. Denny, president, Modern Market Fixtures, Inc., Dayton, Ohio.

12:30 p.m.—Luncheon, Grand Salon-West.

2 p.m.—Clinic on the Service Department.

"How We Set Up Our Service Department"—Richard A. Rauch, sales manager, Gotham Equipment Corp., Richmond Hill, N. Y.

"Determination of Inventory and Equipment"—Foster Van Cleave, president, Friedrich Refrigeration Co., Div. of SuperTex Corp., Fort Worth, Texas.

"Types of Records We Keep and Their Value" — Milton M. Katz, Ever-Ready Refrigeration Co., Trenton, N. J.

"How We Train and Keep Our Servicemen Up-To-Date on the Latest Techniques"—R. J. Wischusen, president, Engineering & Refrigeration, Inc., Jersey City, N. J.

"Our Service Policy" — H. A. Hattenbach, president, The Hattenbach Co., Cleveland.

Question and Answer Period.

6 p.m. — Annual Reception and Dance. Special Entertainment and Dancing.

TUESDAY, NOV. 29

9 a.m.—Round Table Conference Sessions.

9:10 a.m.—Financing (to include distributor financing, financing contracts, sources, charges, results). Introduction by Ray Winther.

10:40 a.m. — Publicizing Distributors' Services (to include all types of advertising, house organs, public relations, open houses, etc.). Introduction by E. B. Ward, president, Baker-Ward, Inc., South Bend, Ind.

Summation—Reports of conference table chairmen on ideas and conclusions reached.

12:30 p.m.—Luncheon, Grand Salon.

2 p.m.—"For Successful Sales Results, Distributors Should Take Every Precaution on Financing of 'Package' Deals"—Dudley M. Cawthon, president Dudley Cawthon, Inc., Miami, Fla.

"The Necessity of Good Accounting Procedures in a Changing Market"—H. E. Humphreys, president, H. E. Humphreys Co., Inc., Concord, N. H.

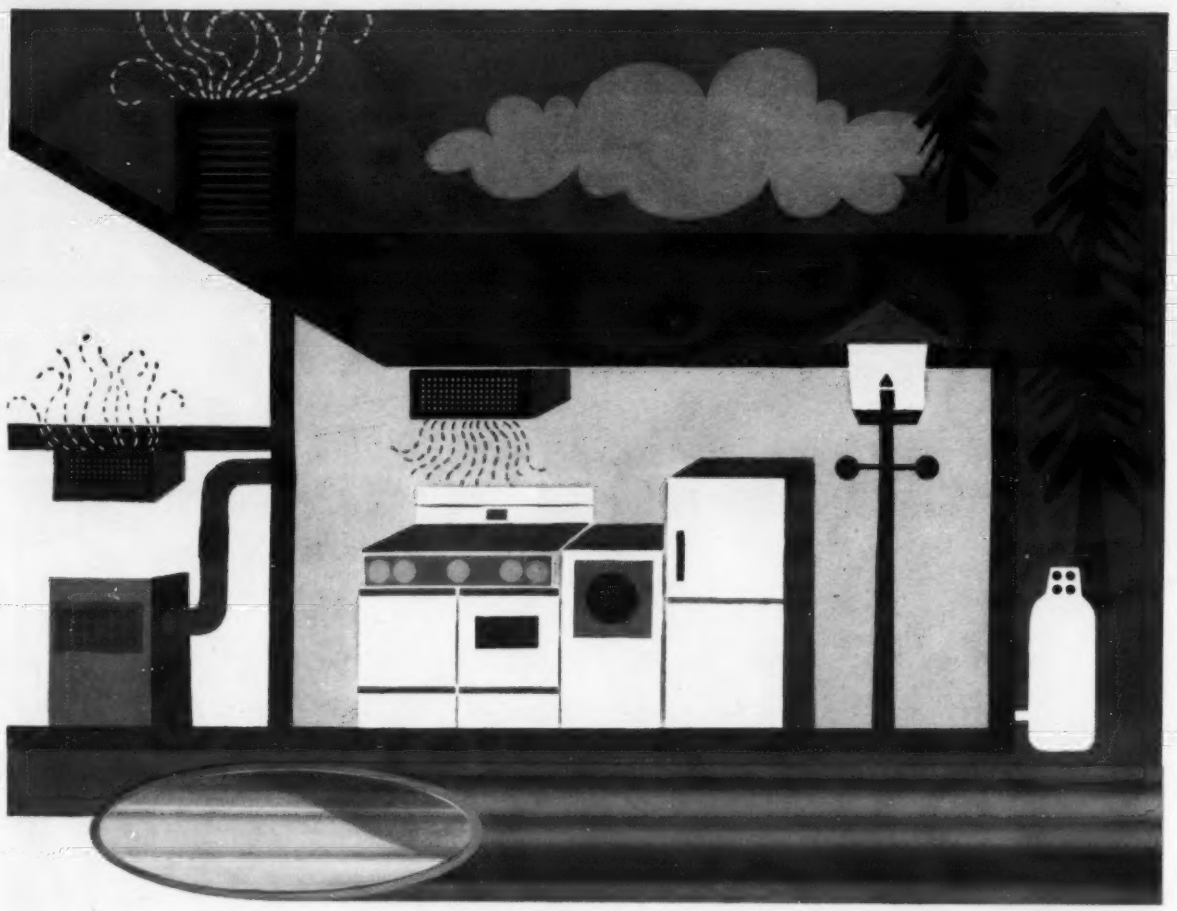
"The Zero Degree Frozen Food Handling Code—Its Effect on the Food Store Operator and the Equipment Distributor"—C. V. Hill, chairman of the board, C. V. Hill & Co., Inc., Trenton, N. J.

"Successful Selling to the Non-Food Market Customer"—James A. Scatena, partner Scatena York Co., San Francisco.

Report of Nominating Committee.

Election of officers and directors.

Introduction of new officers.



Ideal for all kinds of gas-fired appliances and equipment...

NEW PHELPS DODGE TIN-LINED COPPER TUBE*

Protects Against Corrosion!
Eliminates Maintenance and Replacement!
Easily Installed!

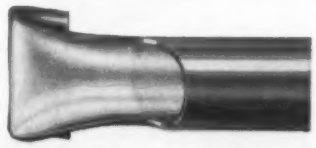
Phelps Dodge has combined the outstanding corrosion resistance of tin with the strength and ductility of copper in a new tube that is immune to troublesome sulphur conditions found in some natural gas and petroleum products. It eliminates maintenance and replacement problems, yet installed costs compare favorably with competitive materials in lines to heaters, ranges, furnaces, air conditioners, LP gas tanks and outdoor gas lamps.

The continuous, inseparably-bonded tin lining positively resists flaking action that can plug lines and orifices. The tube can be bent, flared or soldered, providing "easy-to-use" features that reduce labor costs, speed up installations.

Tin-lined tube can be pulled through old steel or iron pipe without protective wrapping. Available in long continuous lengths and in sizes from ⅛" O. D. to ⅝" O. D. Sample and descriptive data on request.

Phelps Dodge tin-lined copper tube also has advantages for: gas utilities installations; oil lines; laboratory and test equipment; plumbing and water-distilling apparatus; food, beverage and pharmaceutical equipment.

Fusion-bonded tin lining will not crack, peel or flake when bent or flared.



*Patent pending

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By Frank Klein—Only $1.00 ea. Clip this ad and mail with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

Electric Heating Starts Slowly In Kansas City

KANSAS CITY, Mo.—A bad construction year, a couple of strikes, general economic depression, and strong natural gas competition have kept electric heat from getting much of a foothold here.

Kansas City Power & Light Co. has some 225,000 urban and 15,000 rural meters on its lines, but available reports at the time of the NEWS interview showed only 81 electrically heated residences and 49 commercial applications of electric heat. Actually 12 of the residential and 2 or 3 of the commercial jobs are heat pumps, rather than resistance heat.

In sharp contrast, a utility spokesman estimates that some 33% of the homes in this area have some type of conditioning.

"The fact that we have had natural gas in this area for so long, and that gas rates are among the lowest in the country (see related story on this page) has been a major factor in our slow penetration," offered one engineer. "To be frank, what penetration we have made has been chiefly in rural areas where we are replacing delivered fuel. We've made no impression at all on the city yet."

People who get electric heat are generally satisfied, the utility spokesman claimed, although they admitted that residential heat pumps "have had a high incidence of maintenance." The utility calculates that homes can be heated electrically for 14 cents per square foot per heating season; a heat pump averages 12 cents.

More Detroit Area Communities Join Reciprocal Councils

DETROIT — Three more Detroit area communities have joined the area-wide Reciprocal Refrigeration Council and two have joined the Reciprocal Heating Council, Sam Schugar, secretary for both organizations, announced recently.

The village of Grosse Pointe Shores joined both councils. Addition of the cities of Oak Park and Hazel Park brought membership in the Refrigeration Council to 11. Milford joined the Heating Council.

Communities belonging to the councils use common refrigeration and heating codes and permit contractors licensed in one member community to install equipment in any other member community by registering his license in that community.

The Reciprocal Heating Council is preparing licensing forms to be used in all member communities and is developing a central file of contractors licensed in member communities.

It has under discussion a common procedure for granting homeowner permits by which qualified homeowners will be permitted to install heating equipment in their own homes without first obtaining a contractor's license.

Gas Cooling Moving Into K. C. For Both Home, Commercial Use

KANSAS CITY, Mo. — Gas air conditioning, especially in the larger tonnages, is moving into this area rapidly. Five years ago there were about 1,200 tons of gas cooling on the lines of Gas Service Co. here; at present there are over 20,000 tons.

"And for the first time," enthusiastically reports utility engineer Paul E. Chamberlin, "absorption cooling is able to beat competitive electric centrifugals on first cost as well as operating costs."

Chamberlin cited two examples, the airport addition and a hospital, where electrical equipment was the base bid with absorption units the alternate, but where absorption got the job.

Carrier is offering electric centrifugal with cooling tower or absorption with cooling tower at the same price, erected in place, Chamberlin claims.

"Many times," the utility engineer explains, "the gas system appears to have a higher first cost until the difference in the need for electrical service is considered. This usually results in a deduction which puts absorption equipment in top position."

Most of the absorption equipment in the area is Carrier. York and Trane units are just now going in.

At the residential level, Gas Service Co. has about 600 Arkla and Bryant units on its lines.

"Acceptance is very favorable," Chamberlin reports. "We have had almost no trouble with product quality; what difficulties we have encountered have had to do with improper installation—electrical, plumbing, or sheet metal work."

The turndown in construction seemed to give impetus to sale of the air-cooled Bryant air conditioner. "Most people with a gas furnace feel they have a perfectly good piece of equipment there and they usually prefer to add on, rather than replace."

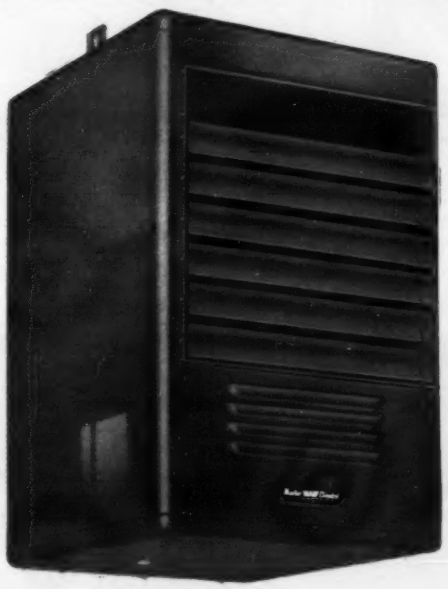
Gas Service Co. acts as distributor for residential gas cooling equipment, but does not attempt to maintain an exclusive outlet.

It encourages other dealers and hopes to get into the position which it feels proper for a utility—promoting, rather than merchandising.

The company services all equipment on its line.

As indicated in the related Kansas City story on electric heat, the gas rate is quite low here—52 cents per 1,000 cu ft. The area has had natural gas for over 20 years and is supplied by Hugoton natural gas fields in western Kansas, claimed to be the largest in the world.

"Our heating saturation among our 500,000-plus meters is way over 95%," says the utility. "And each year we pick up the fringe areas which are now using LPG. There is almost no coal or oil used here," the company claims. "The reason is simply that LPG is used for its flexibility (You can heat, cook, refrigerate with it) and for ease of conversion to natural gas when we extend our lines."



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160-1 Gas Suspended
UNIT HEATER

Look at the many ways this unit means dependability! Its all-welded, unique-design heat exchanger gives efficiency and extra-long, trouble-free life. No flame impingement — no hot "burn out" spots. Cast iron, drilled-port burners for quiet, fuel-saving operation. Solid, durable casing stands up well during installation, and stays handsome for years. Fully insulated for maximum efficiency.

The 160-1 is available in nine sizes from 25,000 to 225,000 BTU input. It is shipped completely assembled and pre-wired. Handy hanging-and-lifting brackets lighten your work. Available in high or low voltage control. Delayed automatic fan control and summer switch are standard. And *every* unit is test-fired before shipment. Fully AGA and CSA approved. See your Mueller Climatrol man for details. Or write direct.

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Distributor Cooling Equipment Sales Up 7% In August

WASHINGTON, D. C.—August sales of air conditioning and commercial refrigeration equipment distributors were 7% ahead of the previous August while those of plumbing and heating equipment and supplies distributors topped August, 1959, sales by 1%, according to the Bureau of the Census.

Although August sales of the air conditioning and refrigeration distributors were down 10% from July, their volume for the first eight months of 1960 was 14% above the like period of 1959. The distributors' inventories at the end of August were 9% higher than a year earlier and 1% lower than a month earlier.

Sales of the plumbing and heating distributors in August gained 12% compared with July. For the January-August period, their sales were unchanged from the corresponding year-ago period.

Air Conditioning Sales Off In Tenn.

NASHVILLE, Tenn. — Sales of room air conditioners and other air conditioning equipment for the period Sept. 1, 1959 to Sept. 1, 1960 in the area served by Nashville Electric Service declined from those in the previous 12-month period, according to a report issued by W. D. Hall, NES sales promotion manager.

Room air conditioner sales in the 12-month period to Sept. 1, 1960 totaled 11,744, compared to 13,809 in the preceding 12-month period. Sales of central unit and heat pumps decreased to 1,192 from 1,319.

Mfrs. Sell 1.3 Million Room Coolers by Sept.

NEW YORK CITY—The National Electrical Manufacturers Association estimated that industry sales by manufacturers of room air conditioners in August totaled 75,000 units. It put sales for the first eight months of 1960 at 1,305,000.

The August total was down from the reported 78,300 units sold in the same month of 1959. However, the total for the January-August period rose from the 1,134,300 reportedly sold in the corresponding period of last year.

A gain was also registered by farm and home freezers. NEMA estimated that freezer sales in August totaled 112,200, compared with 108,400 in the previous August. But sales of freezers in the first eight months of 1960 lagged behind last year's like period, 784,000 against 886,000.

Total industry sales of electric household refrigerators were off both in August and the first eight months from like year-ago periods. August sales were estimated as totaling 301,400 compared to 314,100 in August, 1959, and first-eight-months sales as 2,370,600, against 2,551,200.

Global To Make Tuck-Aire Air Conditioners

SAN FRANCISCO — Formation of Global Air Conditioning Corp. as a wholly-owned subsidiary of Tuck-Aire Furnace Co. has been announced by James P. Tuck, president of the parent company.

According to the announcement, Global will take over all the manufacturing and sales function for air conditioning equipment and components formerly handled by Tuck-Aire.

Tuck-Aire will continue to handle manufacturing and sales of heating equipment and components.

Distribution and sales organization continue the same as established by the parent company.

However, all orders and other correspondence, effective Oct. 1, 1960, should be addressed to Global regarding air conditioning; to Tuck-Aire concerning heating.

Present management group of the parent company will function in a similar capacity for Global.

The headquarters for both groups remain at 2045 Evans St., San Francisco 24, Calif.

ONE OF 200 3-ft cores, said to be 1,000 to 5,000 years old, taken this summer from an ice shelf near the North Pole, is checked upon its arrival at Dartmouth college's cold weather laboratory by Robert Blair, research assistant in the geology department. The crates of glacier ice were flown to Greenland, shipped to Bayonne, N. J., and then trucked by a Thermo King unit-refrigerated truck to Dartmouth. The ice specimens are to be studied to understand the nature and origin of floating ice shelves and to learn how to land aircraft on ice.

Bundy can mass-fabricate practically anything

'Jet-Cool' High Velocity Central Residential Air Conditioning Has 3 Basic Adaptations

ENGLEWOOD, N. J. — A technical description of the "Jet-Cool" high velocity central residential air conditioning system was issued recently by its manufacturer, Jet-Heet, Inc.

Jet-Cool features high velocity air, aspirating registers, very small flexible insulated ducting, and the ability to handle small amounts of air at 40°F. It has three basic adaptations:

1. Installed as a separate unit where the home has a heating system other than central warm air, such as radiators, baseboards, floor or wall furnace, or space heater.

2. Installed in a home with a standard metal duct warm air system.

3. Installed with the Jet-Heet high velocity duct and register system for both heating and cooling.

Basic components of the Jet-Cool central air conditioning system include an outside compressor-condensing unit, an inside air refrigerating unit, special design aspirating registers, and 2-in. I.D. flexible tubing that can be installed through stud spaces as BX electrical cable is strung. The 3-hp system uses only 6 lbs of R-22 refrigerant.

The remote outdoor condensing unit (RCU) is 3 hp, single phase, 230 volts. The cube shaped unit is 26 in. in all three dimensions. Condenser air comes out the top. All operating parts are sealed for protection from rain and snow.

Indoor air refrigerating unit (ARU) has a ⅓-hp fan motor that operates at 1,725 rpm. It requires a 115-volt, 6.4-amp line. The unit, including duct outlets, is 51½ in. high, 21¾ in. wide, and 24 in. deep. Together the indoor and outdoor units produce 32,000 Btuh at 95°.

With its special aspirating registers, flexible tubing, small duct sizes, and deep refrigerating coil, Jet-Coil moves one third the normal volume of air at a very dry 40° and at a velocity of 2,000 fpm. Ducts are insulated with fiberglass and covered with neoprene to prevent condensation.

'Jet-Blend' Registers

Special "Jet-Blend" registers mix two parts of room air with one part of super-cooled and super-dry air, giving the proper amount of air at proper temperature, velocity, and humidity in each room.

With the Jet-Cool system, return air ducts are usually not necessary. Only 525 cfm of air passes over the cooling coil and that much will return to the unit by normal leakage, the manufacturer says. When the evaporator unit is located in a non-air conditioned area, however, one return duct is advisable.

The condensing unit, specially designed to blend with shrubbery, should not be installed under an overhang. Concrete mounting pad should be located to provide easy access to refrigerating unit and available electrical tie-in lines, it was pointed out.

The manufacturer recommends that refrigerant lines between compressor and evaporator not run farther than 80 ft.

When used for cooling alone, Jet-Blend registers should be located high on an inside wall. This location will give optimum cooling and will cut down on Jet-Tube duct runs, if fed from above. The system will operate quite efficiently with duct runs up to 40 ft, according to the manufacturer.

'Sonotrons' Prevent Sound Infiltration

Included in each Jet-Cool package, as in the Jet-Heet system, are specially designed "Sonotrons," which, when placed at any point in the Jet-Tube run, prevent sound filtration.

When Jet-Cool is used in combination with the Jet-Heet furnace, the same flexible ductwork and registers are used for both. The evaporator unit is placed on the right side of and flush with the Jet-Heet furnace. A crossover duct connects the two bonnets. An automatic damper actuated by blower air from the furnace or cooling unit closes off the unit not in use.

When Jet-Cool is installed with an existing forced warm air system, Jet-Tubes are run from the evaporator unit to the furthest point of the warm air ducts where they begin their rise or go into the wall.

Jet-Tube is inserted into the ducts for an inch or two at a 30° angle. This mixes the two air streams so as to provide the proper amount of cooling.

The use of the deeper evaporator coil, working in combination with the insulated Jet-Tubes and the high speed dry air, gives the system its effective cooling and high efficiency of operation, the manufacturer declares.

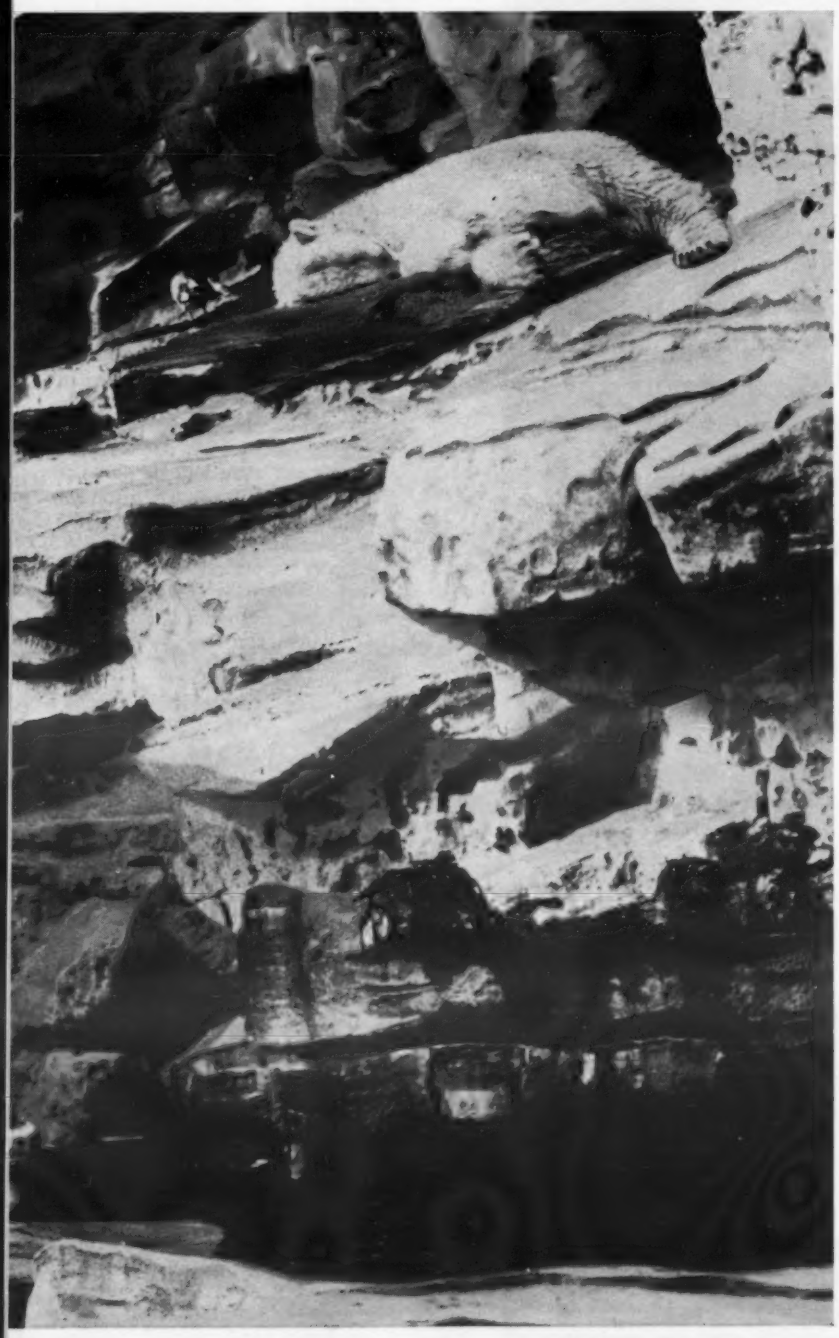
For Your Reprint Copy

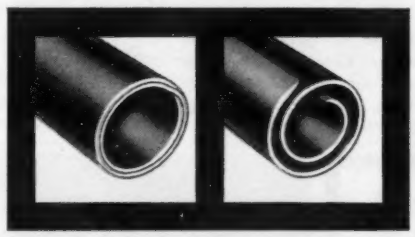
"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

Complex or simple—regardless of the shape—your tubing components need precision bending to fit fast and fit right on your production line. ¶ Bundy turns out parts like these by the thousands or millions . . . at a remarkable low unit cost. These tubing components are made from Bundyweld®, the only tubing of its kind that's backed by years of manufacturing experience and accepted as the safety standard of the refrigeration industry. Bundyweld steel tubing is covered by ASTM 254 and Government Specification MIL-T-3520, Type III. ¶ Next time you need tubing, phone, write, or wire: Bundy Tubing Company, Detroit 14, Michigan.

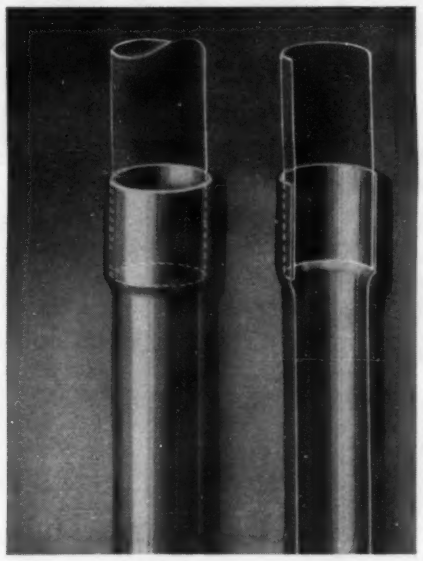
BUNDY TUBING COMPANY • DETROIT 14, MICH. • WINCHESTER, KY. • HOMETOWN, PA.

World's largest producer of refrigeration tubing. Affiliated plants in Australia, Brazil, England, France, Germany, Italy, Japan.





Bundyweld, double-walled from a single copper-plated steel strip, is metallurgically bonded through 360° of wall contact. It is lightweight and easily fabricated . . . has remarkably high bursting and fatigue strengths. Sizes available up to ⅝" O.D.



The Bundyweld expanded connection makes tight joints possible with only one on-the-job operation. Note that the mating tube needs no reducing or sizing and that the flow through the finished joint will remain completely unrestricted.

BUNDYWELD® TUBING

9,100 Tons of Air Conditioning Installed In New 64-Story Chase Manhattan Bank

THESE TWO HONEYWELL Selectographic DataCenters will control 51 air-handling systems, 3,000 thermostats, 4,000 valves, and 9,100 tons of refrigeration capacity in New York's Chase Manhattan bank, world's sixth-largest building. Each DataCenter has two translucent screens which, at the touch of a button, show floor plans and schematic drawings for parts of the 64-story building. Here engineers make last-minute checks on one DataCenter before it leaves plant.

NEW YORK CITY—One of the biggest air conditioning systems ever installed in an office building is going into the new $131-million Chase Manhattan bank in downtown New York.

The world's sixth-largest office building, 64 stories tall, will have nearly 2 million sq ft of floor space, a population of 15,000 employes, and 10,000 visitors daily. To keep them comfortable, 51 air-handling systems will circulate 2 million cfm of temperature-controlled air day and night, according to Minneapolis-Honeywell Regulator Co.

Punctuating the anodized aluminum exterior and compounding the air conditioning job are 8,800 windows with an area of 800,000 sq ft. Other complications arise from the tens of thousands of people, office machines, and lights. Lights alone will give off 17 million Btu an hour. Peak heat output from the building will be over 275 million Btu.

To handle this load the building will have 9,100 tons of cooling capacity. Four refrigeration units, the largest centrifugal compressors of their type Carrier ever manufactured, will do the job.

Building Divided at 22nd Floor for Cooling

The building is "divided" at the 22nd story for air conditioning purposes. The first 21 stories plus the 5-story basement are on one system; a second air conditioning system serves the 22nd to 60th floors. (The top four floors are filled with mechanical equipment.)

There is a four-zone interior system on each floor, and these are supplemented by a perimeter system. Altogether some 3,000 thermostats will be used.

The interior system uses medium-velocity, medium-pressure air. Temperatures for each zone on every floor are individually controlled to compensate for sun, wind, interior heat load, and other factors. The electronic thermostats governing each of these zones are rated 100 times as sensitive as the average human's nervous system.

Eighteen perimeter systems circulate high-pressure air at high velocity through 7,000 induction units. These induction units "wipe" the windows with conditioned air, creating an air-blanket of insulation against outside heat or cold. Air from the unit is mixed with room return air in an approximate one-to-five ratio.

In winter, water circulating through the induction coils is at 90 to 110°; in the summer this water is about 60°. Honeywell thermostats sense return air temperature, regulating the water flow to maintain a constant temperature. Building personnel can adjust the thermostats for their own comfort.

Low-pressure air will be circulated through ceiling diffusers on the five basement levels. All air for the building will be "scrubbed" by electronic air cleaners.

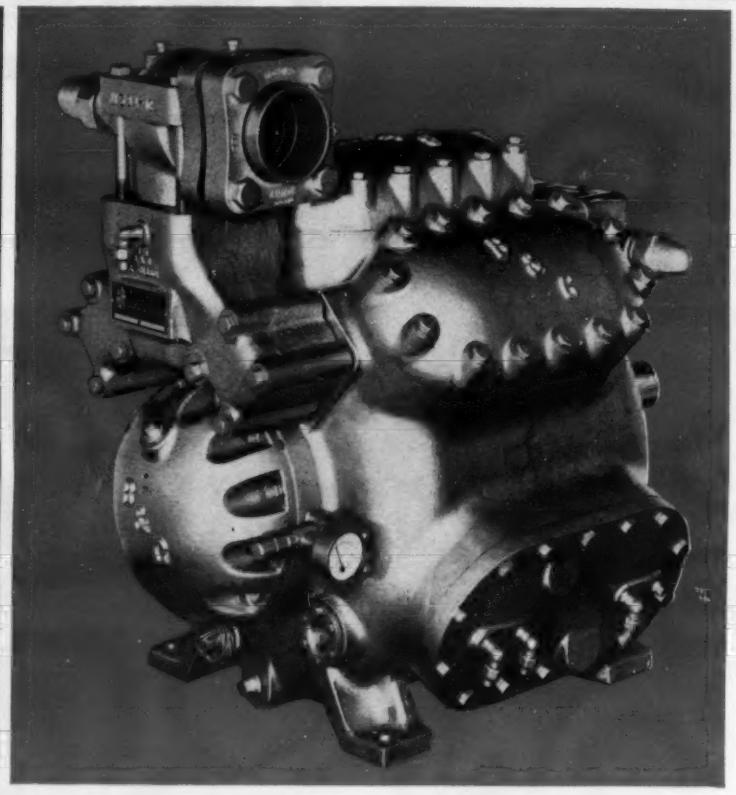
The operating "brains" behind the air conditioning systems are two Honeywell "Selectographic DataCenters," one on the 11th floor to handle the lower section, the other on the 31st floor to take care of the upper stories. These two Selectographics will enable two engineers to control comfort throughout the 64-story structure.

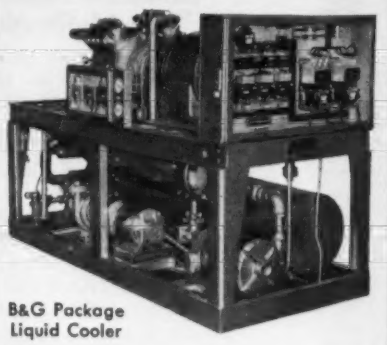
What One Man Can Do

Because the bank areas on the lower stories will be finished first, the 11th-floor DataCenter will be installed first. Simply by pushing buttons on its compact console one man will be able to:

- View any of 37 different schematic drawings showing air-handling systems and converters supplying the first 21 stories and basements.
- View any of 17 different floor plans for the lower building and basements.
- Stop any of 71 supply and exhaust fans or 16 pumps; in addition, there are provisions for controlling an additional 22 fans and 12 pumps.
- Check temperatures at nearly 400 different locations on the lower 21 floors.
- Raise or lower temperatures at some 200 areas on the first 21 floors.
- Change from summer to winter operation on the air conditioning systems.
- Check which of 13 electric strip heaters are on or off.
- Immediately see which air-handling fans and pumps are running.
- See and hear emergency signals for malfunctions at any of 33 pressure-reducing valves, heaters, sump pumps, turbine tanks.
- Make a continuous record of any 20 of 732 key temperatures.
- Read and record steam,

B&G Condensing Unit





B&G Package Liquid Cooler

All B&G Condensing Units and Package Liquid Coolers are equipped with B&G Compressors, shown here being assembled under controlled temperature and humidity conditions.

New Compressor better satisfies today's air conditioning requirements

An essential requirement of air conditioning equipment is *quiet* operation. In the newly developed B&G Compressor, this characteristic is an outstanding feature. The Compressor is completely new in conception, engineered and built to establish higher standards of performance.

The amazing reduction in vibration and noise is concrete evidence of quality! It indicates precision manufacture of a basically superior design. B&G Compressors have fewer parts, present fewer maintenance problems. All units have *one* bore—a few interchangeable parts will service them all. All these things add up to a sound warranty of exceptional performance and long life.

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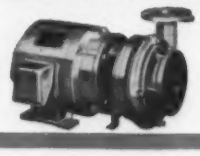
B&G Evaporator



B&G Centrifugal Pump

B&G Condenser

condenser and chilled-water flows, and temperatures.

• Check outside wet and dry-bulb temperatures.

• Pinpoint cause and location of almost any mechanical trouble that may develop.

• Detect the fact that the snow-melting fluid has gone below a critical level, and get readings on a number of other operating "conditions."

Control Center No Bigger Than Two Office Desks

Honeywell engineer said the Selectographic has been miniaturized down to a control center little bigger than a couple of office desks. The entire panel, including the 732-station recorder, alarm panels, and gauges, is less than 17 ft long.

"Key to this miniaturization is putting all the schematic drawings on 55-mm. slides, then projecting them onto a translucent screen about the size of a home television set," it was explained. "Each Chase Manhattan Selectographics will have two screens: the left screen will show the operator the air-handling systems and converters; the screen on the right will contain floor plans.

"Simply by touching push-buttons the Selectographic operator can bring any one of 100 schematics into view directly in front of him.

How Temperatures Are Read

"Each projector is electrically linked with four pushbuttons on the panel. The pushbuttons complete circuits to temperature sensors at various points in the building. When a given schematic — say, that of the 18th floor — is projected on the screen, the four pushbuttons are locked into that same system and temperature readings are from points on the 18th floor.

"When another schematic (for the 20th floor) is selected, the Selectographic automatically switches the pushbutton circuits to that same system. Pushing the four pushbuttons then brings in temperature readings from various points on the 20th floor. Thus only four pushbuttons are needed to check more than 400 different temperatures.

"Two other pushbuttons are used to raise or lower temperatures in some 200 areas on the first 21 floors. Like the four temperature-sensing pushbuttons, these two are electrically tied into the same circuit that is shown on the Selectographic screen. Pushing one button increases the thermostat setting at the one location, raising the temperature; pushing the other button lowers the temperature."

Not only does the Selectographic dramatically reduce space requirements but it also rivets the operator's attention onto one system at a time, Honeywell engineers said.

Together the two Chase Manhattan DataCenters will use more than 20 miles of wiring and 50 miles of pneumatic tubing to bring comfort-control information to building engineers.

To back up the Selectographics, more than 450 thermostats are scattered throughout the building to control individual zone temperatures, in effect second-guessing operation of 2,500 other Honeywell thermostats and regulating some 4,000 valves.

In all, more than 8,500 pieces of temperature-control equipment have been installed.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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HEAVY DUTY & MEDIUM JIFFY CLIPS

Also available without mounting hole for use with gun.

Made of heavier materials! Has exclusive inverted rib, that provides more strength at the bend of clip . . . and, of course, adds the benefits of famous "Snap On" feature! Send for literature.

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Hotel Guests Vote 20-1 For Cooling

RICHMOND, Va.—Air conditioning is the top requirement of the public in planning hotel modernization, a month-long survey here has revealed.

A 20-to-1 margin for air conditioning over television was registered when hundreds of local business leaders and hotel guests were given an opportunity to write the ticket for a million-dollar refurbishing of the Hotel John Marshall here by John S. Lanahan, president of Richmond Hotels, Inc.

Lanahan set aside a number of rooms for inspection, as a guide to selection of equipment, accessories, and color schemes. At the same time, a questionnaire was distributed. Returns revealed that guests wanted air conditioning in almost every case.

NFPA Issues Revised National Fire Codes

BOSTON — A new and revised edition of the National Fire Codes has been published by the National Fire Protection Association.

The 1960-61 issue of this authoritative reference work incorporates important changes in many fire safety standards, according to Robert S. Moulton, technical secretary.

The 7-volume 1960-61 edition is a compilation of the 181 standards developed by NFPA in the fields of flammable liquids and gases; combustible solids, dusts, chemicals, and explosives; building construction and equipment; extinguishing equipment; electrical installations; and mobile fire equipment, transportation, and management.

New material includes 42 new or revised fire safety standards adopted at the 1960 annual meeting of the association, and incorporates all amendments approved by the NFPA board of directors up to and including July 30, 1960.

The National Fire Codes ($7 per volume, $40 for the set of 7 volumes) are available from the Publications Dept., National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass.

Gets Duke Contract For Heating, Cooling

SPARTANBURG, S. C. — Freeman Heating & Air Conditioning Co., Greenville, has been awarded the contract for installation of heating and cooling equipment in a new $400,000-plus building to be constructed by Duke Power Co. on East Main St. here.

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SOLENOID VALVES
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ALCO'S HIGH QUALITY
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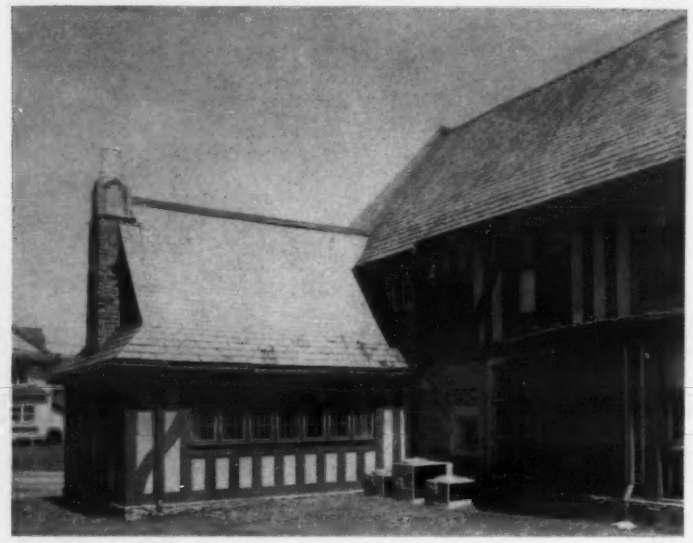
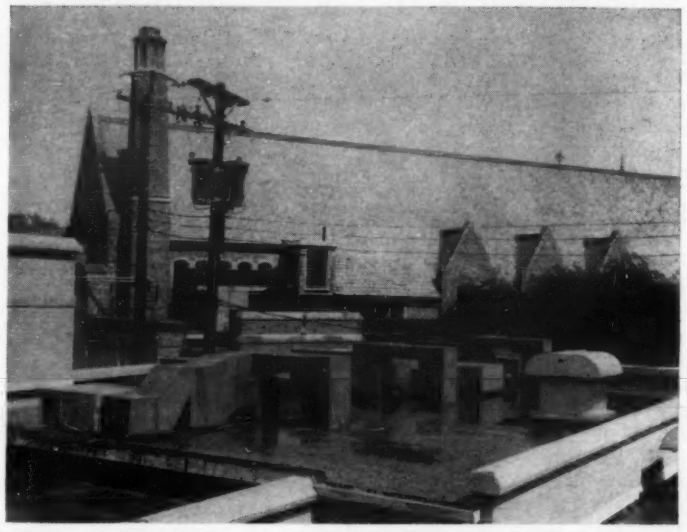
The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

71 Tons of Air Conditioning Hidden On Church



LEFT: TUCKED IN CORNER are condensing units for bishop's chapel, ladies parlor, and church offices. Back of a casement room air conditioner can be seen in second floor window in center of picture.

RIGHT: ROOF TOP installation of three air conditioners serving Fellowship Hall. To right of telephone pole can be seen model 1020 air conditioner. No effort was made to conceal this unit as it is on side of church away from street and cannot be readily observed from ground level.



DAYTON — Air conditioning dealers are often required to play "hide-and-seek" in church applications.

Jerry Koehnen, a local Chrysler Airtemp dealer, experienced such a request when he received the contract to install 71 tons of air conditioning equipment in the Grace Methodist church.

Trustees required that the church's architectural integrity not be violated, either on the interior or exterior.

One of Koehnen's problems involved "hiding" two 20-ton water-cooled units, each unit approximately 8 ft wide and 8½ ft high. These units, used only on Sundays, were selected for their economical operation, it was stated.

On the street side of the church a 20-ton unit was hidden behind a parapet, while the church shielded the second unit from view. Open spaces inside the church made it impossible to conceal interior ductwork, so it was installed along the exterior of the church, on the lower section of the roof.

Look Twice To See Ducts

This exterior ductwork on the street side was painted to resemble masonry construction, even including painted mortar joints, and passers-by on the street side have to take a second look to distinguish this ductwork from the masonry.

The ductwork feeds supply grilles located on the interior archways. These supply grilles, painted to match the walls, were installed through 24-in.-thick masonry and a low air velocity is used at the grilles faces. This, with acoustical lined ducts, maintains an exceptionally low sound level.

The return air from the interior of the church is taken through air shafts located behind the pulpit and the baptismal fount, retaining the interior integrity.

A balcony in the church's sanctuary, which is used for overflow crowds, is cooled by two large room units, 23,000 Btu each. They were placed in a bell tower no longer used and ducts were run to the ceiling of the sanctuary balcony.

The church, which seats approximately 700 persons, thus is cooled by 45 tons of equipment.

Quietness was an essential re-

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DRYMASTER BALANCED FILTER-DRIER
Gives superb filtering and drying, protects against acid, moisture and sludge through use of "Hi-Fi" filter block desiccant, superfine monel screen filter tube and inlet distributor disc. Drymasters are available in 59 different sizes and styles with capacities from 2 tons through 165 tons . . . male and female flare or solder-type end connections.

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Gives added convenience—can be recharged in minutes.

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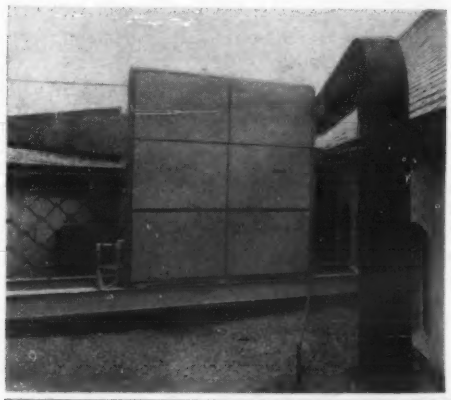


ONE OF 20-TON packaged units located behind a parapet. It cools church auditorium. To left of unit is room air conditioner with duct going through to ceiling of pastor's study. Study is located in area that did not lend itself to through-the-wall installation.

quirement for the Bishop's Chapel, which is used for small weddings and special Sunday services. The chapel seats 75 persons and acoustically lined ductwork was installed to maintain a very low noise level. This chapel is used from three to five times a week and required 4 tons of air conditioning.

Three model 1104-00 packaged air conditioners were located on the roof of Fellowship Hall, which is used for social meetings, Sunday school, Board of Directors meetings, choir rehearsals, and banquets. It seats approximately 200 persons.

The Ladies' Parlor was also air conditioned with a 4-ton packaged unit hidden behind shutter doors. Its individual controls permits air conditioning independent from other church areas.

A room unit was installed in the room of the pastor's study and ducted to its ceiling and Chrysler casement units were used in the three other offices. The exclusive Chrysler casement units do not protrude outside of the window.

Rev. E. J. A. St. Louis, an associate minister at Grace Methodist church, believes the air conditioning is fulfilling its purpose and maintaining attendance at summer services and meetings.

In addition to maintaining summer attendance, the air conditioner has been beneficial in keeping the church interior clean and quiet.

The quality, tailor-made installation for Grace Methodist church cost close to $35,000 and its annual operating costs are estimated at $600.

Mid-South Needs Better Training To Provide Skilled Journeymen

LOS ANGELES — Establishment of better training programs to provide skilled and qualified manpower was expressed as one of the key factors that would affect the future growth of the refrigeration and air conditioning industry in the middle and southern states.

This was the consensus of opinions noted by Henry B. Ely, western representative of Refrigeration & Air Conditioning Contractors Association (RACCA), during a recent three-state tour through Missouri, Tennessee, and Louisiana.

In his meetings with refrigeration and air conditioning contractors and labor representatives, Ely said the training problem was considered to be of paramount importance if the industry in those particular areas was to keep pace with other sections of the nation.

During his contact with the groups, he made arrangements to supply outline of courses and training information utilized by the joint journeymen and apprentice training committee in Los Angeles and Orange Counties (Calif.) which has developed a strong program under the Certified Refrigeration & Air Conditioning Foundation (CRAC). As the executive secretary of RACCA of Southern California, Ely has been closely associated with the Los Angeles program.

Ala. Plumbing, Heating Group Adds Cooling

BIRMINGHAM, Ala.—Jefferson County Plumbing & Heating Dealers has changed its name to Associated Plumbing Heating & Cooling Contractors, Inc., to conform with the new name of the Alabama state association, now known as Associated Plumbing Heating & Cooling Contractors of Alabama, Inc.

The new name more nearly encompasses the growing air conditioning field.

The Jefferson County unit has adopted a new constitution and by-laws according to Price Grice, president, and is divided into two divisions one commercial (union shop) headed by Bill Early and one merchandising (non-union) headed by Henry Smith. The divisions will hold separate meetings monthly with a general meeting quarterly.

One of the objectives of the expanded association is to obtain a plumbing code for Jefferson county, so as to cover rapidly growing suburban areas, now outside the city limits.

●

So Does Sheet Metal Group In Los Angeles

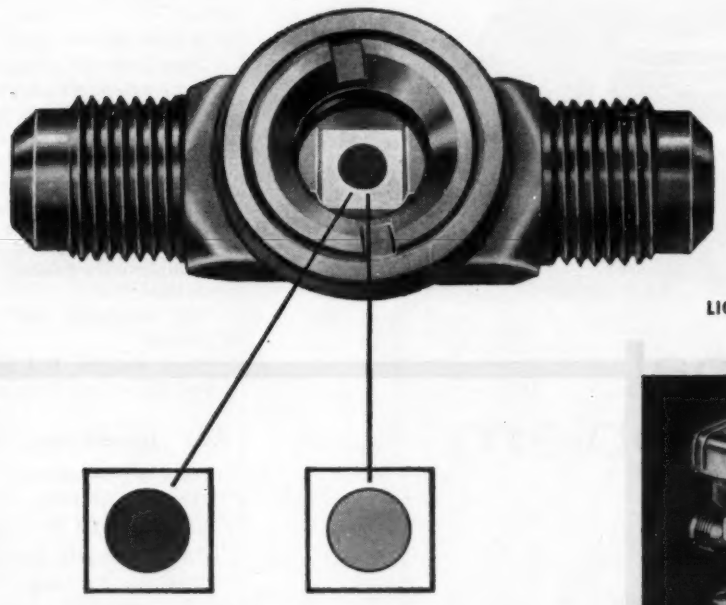
LOS ANGELES—Sheet Metal & Air Conditioning Contractors Association of Southern California is the new name for the Sheet Metal Contractors Association of Southern California.

John H. Bantick, managing director, said the reason for the change is to conform with the name of the Sheet Metal & Air Conditioning Contractors National Association.

Bantick said SMACCASC has moved to new offices at 1830 W. 8th St., Los Angeles 57, with new telephone numbers DUnkirk 5-2297 and 5-2298.

New president of SMACCASC is H. G. Shaver of Western Air & Refrigeration. Edmond Banks of Meadows Sheet Metal in Culver City is vice president, and Harry Fink of A & S Air Conditioning is secretary.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.



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Round blue spot shows the system is full and dry. Round pink spot shows that moisture is present.

Color spot indicator loses its shape when refrigerant level drops.

This dual-purpose indicator gives the same dependable, leak-proof performance that has made the Streamline single port liquid indicators famous for years but has the added advantage of being a combination moisture and liquid indicator all in one compact unit. A color spot indicator in the new Vuemaster makes possible an instant check of the refrigerant. When the color spot is round and blue, the system is sufficiently charged and the refrigerant is in a normal, dry condition. The spot changes to pink when excessive moisture is present and loses shape when refrigerant supply is low.

Combining engineering skill, experience and quality-controlled production, the Mueller Brass Co. manufactures a line of refrigeration and air-conditioning products that surpasses the most rigid code requirements. Their absolute dependability makes them first choice in any refrigeration or air-conditioning system. Always buy and install Mueller Brass Co. products . . . manufactured in the most complete range of styles and sizes in the industry. Get them at your wholesaler's today.

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MADE IN U.S.A. TO THE STANDARDS OF AMERICAN INDUSTRY

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

qualified applicant also has worked to increase the employment opportunities of the mature. Testing has revealed that 40 per cent of the men over 45 can outproduce younger employes, even to the age of 65."

For many years it had been believed that the high cost of providing pensions has deterred employers from hiring people over 50. This assumption turns out to be a fallacy.

The NAM recently queried 70 leading corporations, asking: "If you have a pension plan, does it affect your employment of men over 50?" Summary of the replies:

Fifty-eight percent of employers queried declared that age did not affect employability of qualified workers.

Thirty per cent said they could not include anyone in their pension plans until he had been employed five to ten years.

Twelve per cent responded that they did not discriminate against hiring older workers, but did not include them in pension plan.

Most firms compensated for this pension exclusion with a "separation allowance" when older men finally left their payrolls.

Including older workers in pension plans is less costly than anticipated, moreover.

Group life insurance costs were found to average only a cent an hour more for a 50-year-old man than for a 30-year-old; and the lower accident rate of older workers reflects favorably in the charges for workmen's compensation insurance.

Chances for Executive Success Can Be Measured

What you *were* may well determine what you *are*.

Your education, family and financial history, work experience and leisure-time activities seem to determine how successful you will become in the business world, according to a research study recently completed for the American Chamber of Commerce.

This year-and-a-half-long study, one of the most comprehensive research projects ever carried out on a group of managers, was initiated by the Management Standards Committee and conducted by the consulting firm of Byron Harless & Associates.

Purpose: identifying specific background history factors which lead to success as a top executive.

After locating 35 executive success factors, these were combined into a "weighted application blank" which can be scored something like a test.

That scoring system has been tried out on additional groups of executives, with the result that top Chamber of Commerce executives (who are considered highly successful by their actual records) who took the test registered high scores.

On the other hand, Chamber executives who have compiled less successful records scored quite low on these examinations.

To develop this executive evaluation procedure, the Byron Harless & Associates staff interviewed a cross-section of Chamber people all over the country to complete 11-page background-history questionnaires on each.

The 600 participants gave detailed information about their early family experiences, education, extracurricular activities, financial history, job records, recreational and professional activities.

Detailed statistical analysis of the contrasts between the background histories of those who had been most successful and those who were "mine run" led to the aforementioned 35 significant success factors.

Implications of this new procedure for evaluating probable executive success are tremendous. For the first time, it may be possible to predict with considerable accuracy whether or not a young man has the potential to become an outstanding executive.

The typically successful businessman, it turns out, reveals a significant pattern of leadership in high school and college. Almost all had engaged extensively in a large number of extracurricular activities—particularly those involving skill in communications—such as debating, oratory, and writing for the school paper or year book.

In addition to being an active participant in school organizations, this man invariably was a leader in terms of holding office in such clubs. In one random sampling of the successful group, 41% had been president of a high school class!

Thus it would appear that the current emphasis on high grades in school—to the exclusion of "activities"—may be a serious misreading of the facts.

Story of the Week

Gushing listener to a Yehudi Menuhin violin concert overemotionalized:

"Mr. Menuhin, you truly are a genius."

"Yes, madam. But before that I was, for a long time, a drudge."

Add Advertising Signs

On a florist delivery truck:

"Drive Carefully. The Next Load Might Be For You."

On a fraternity parking lot:

"Private Parking. Unauthorrized Cars Will Be Cannibalized."

On the rear bumper of a Volkswagen.

"No honk. The hurrier I go, the behinder I get."

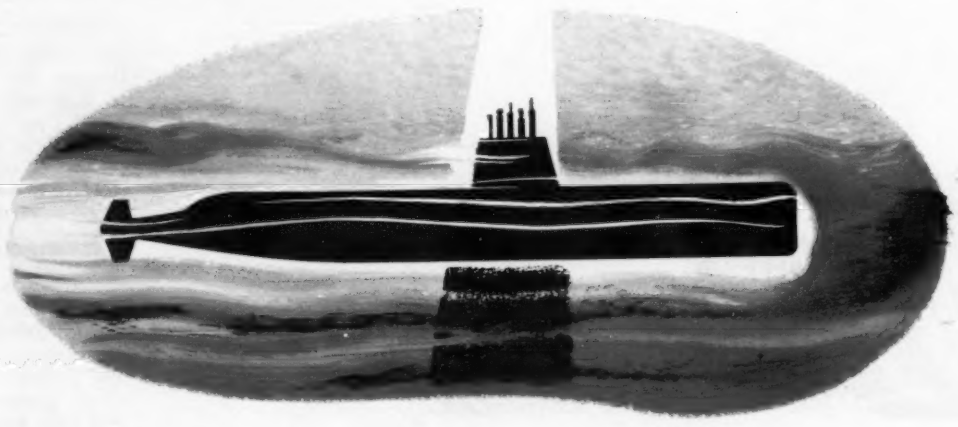
Fascinating Names Dept.

Press release from the National Labor Relations Board reveals that there's a company in Monticello, N. Y., known as Fine's Nearby Egg Corp.

Add Definitions

Bachelor: Man who can take a nap on top of the bedspread with his shoes on.

Modesty: The feeling that others will discover, by themselves, how wonderful you are.



how activated charcoal solved a no. 1 problem of our atomic subs ...fresh air

The scarcest commodity aboard our atomic subs is not fissionable material—it's plain old fresh air.

Take a hundred men, hermetically seal them in a huge steel tube, then submerge the tube for days at a time.

Call the result the "Nautilus" or the "Triton" and you have an idea of the problem of building submarines to utilize the power potential of nuclear energy. They can literally stay submerged as long as the crews can stand the confinement.

Even without other contamination, just breathing would soon make the air within the tube unbearable. Then add body odors, a kitchen, a lot of complex machinery, areas where smoking is permitted, lavatories and waste tanks and you have a real problem.

To solve the problem, the Navy turned to one of the oldest and most effective methods of air purification—adsorption by Activated Charcoal.

Barnebey-Cheney Activated Charcoal filters are a standard part of the sub's air conditioning systems. Others are installed on the waste tank vents, still others in the lavatories. Odors and contaminants are trapped and held in the Barnebey-Cheney Activated Charcoal.

The same principle adds sales appeal to appliances and installations for heating, ventilating, cooling and storage in homes, offices, schools, hospitals and public buildings where fresh, healthful, odor-free air is essential. Barnebey-Cheney designs and fabricates all types of activated charcoal filters, both reusable and throw-away; supplies a complete line of activated charcoals to original equipment manufacturers for every purpose.

As in the atomic submarines, *true* air conditioning *must* include *air purification*. Activated Charcoal is the proven, practical means of accomplishing it. To learn more, write for Bulletin T353. Barnebey-Cheney, Columbus 19, Ohio.

Barnebey Cheney

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- **expanding your territory**
- **taking on new lines—**

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Boiler Water Treatment Saves $Millions In Maintenance for U. S. Defense Dept.

DAYTON — Proper treatment of boiler water is saving the Department of Defense more than $5,000,000 a year in reduced replacement of corroded return line components, according to Dr. A. A. Berk of the U. S. Bureau of Mines.

This was disclosed by Dr. Berk at the recent Heating and Power Conference sponsored by Headquarters, U. S. Air Force at Wright-Patterson Air Force Base here.

Noting that practices recommended by the Bureau of Mines have resulted in "general freedom from corrosion and caustic cracking in boilers," Dr. Berk declared that "Federal experience with return line corrosion has been much less satisfactory.

"One principal reason is that the return lines in an area-heating system may include miles of piping. Control practices that proved successful in apartment houses and in industry are not found, in general, to be equally useful in Federal installations.

"Consequently, the principal advances toward successful control of such corrosion are those developed relatively recently by the Bureau of Mines in cooperation with the Defense Department," he said.

Bureau of Mines Tester Cited as Forward Step

"One very important step forward was the development of the Bureau of Mines tester, with which surveys can be made for corrosiveness of steam condensate. This device is essentially a pipe nipple that is lined with weighed steel rings.

"Testing with devices such as wire coils, spools, and strips give little information on what causes corrosion and how deeply it penetrates pipewalls. The bureau tester provides both weight-loss data and a corrosion pattern, which are directly relatable to severity of corrosion and its cause.

'Carbonic Acid Blamed For Most Corrosion'

"One of the more significant findings from the corrosion-tester surveys is that carbonic acid is responsible for most of the corrosion in Federal heating plants, as shown by channeling in the test nipples.

"The source of the carbonic acid is the bicarbonate content (alkalinity) of the makeup water. In the boiler bicarbonates and carbonates lose carbon dioxide to the steam, and carbonic acid is formed when the steam condenses," declared Dr. Berk.

"The condensate that comes back to the boiler room brings back carbonic acid in solution. If the heat plant has no deaerator, this carbonic acid is recycled.

"Wholesale condensate contamination is not of very frequent occurrence, and comparatively little of the pitting in main return lines occurs while the system is in operation. Most such trouble stems from poor layup practice or no layup practice.

"Stagnant water in the piping becomes impure locally through accumulation of soluble corrosion products. This creates an environment that is very conducive to the formation of concentration cells, tubercules, and pits," he suggested.

"The ideal method for controlling return-line corrosion is elimination of carbon dioxide from the feedwater. This has been approached in a large number of heating plants through a variety of methods, of which the most readily available are minimized makeup and improved deaerator performance.

"In several instances, substantial improvement was also effected through external conditioning of the makeup water. Outstanding improvement was effected in many Air Force plants when sodium carbonate was eliminated from the feedwater treatment," said Dr. Berk.

"Feedwater makeup rates should always be restricted to the practicable minimum. Makeup water usually contains undesirable impurities that require chemical treatment within the boiler, and the resulting sludge often creates problems.

"The blowdown rate generally increases faster than the makeup rate for this reason. Also, makeup water is generally cold and a high makeup rate may lower the feedwater temperature so much that good deaeration is impossible.

Low Makeup Rate Gives Trouble-Free Operation

"However, just as sure as high makeup rate increases the probability of trouble, a very low makeup rate practically insures trouble-free operation. Most Federal heating plants are operated with low makeup, and the maintenance records show that these plants have little or no return-line corrosion," he emphasized.

"Good deaerator performance will do much more than remove dissolved oxygen from the boiler feedwater. If the deaerator is operated at a suitable back-pressure and vented to remove non-condensable gas, practically none of the carbon dioxide in the return condensate is recycled.

"An appreciable quantity of the free and combined carbon dioxide that enters the system in the makeup water will also be removed with the dissolved oxygen. The resulting increase in the pH of the feedwater will be useful in protecting the feed-pump, valves, and piping from corrosion," explained Dr. Berk.

"The second positive method for controlling return-line corrosion is chemical treatment that neutralizes the carbonic acid in the condensate. The chemicals most commonly used for this purpose are morpholine and cyclohexylamine.

Morpholine, the less alkaline and the less volatile of the two, is preferred in plants where deaerator performance is known to be good. Cyclohexylamine is much the more useful in low-pressure plants that are operated without feedwater deaeration. Both materials are now Federal-contract chemicals," he said.

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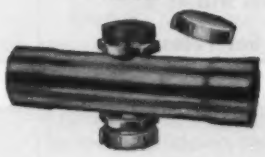

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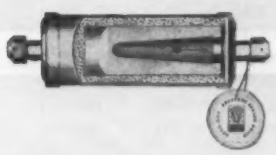

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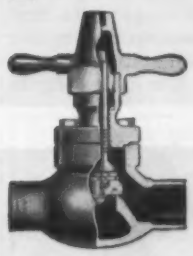

Only Henry offers you this complete variety of types and sizes, from ¼" flare packless to 4⅛" O.D.S. packed Wing Cap valves, from 1 ton sealed type to 165 ton cartridge type filter-driers and ¼" flare single port to 2⅛" O.D.S. double port moisture indicators.

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12 Steps to Better Sales

Proven Plan Worked for Former Retail Salesman

By George M. Hanning

DETROIT—Twelve steps to better sales were pointed out to members of the Detroit Heating & Air Conditioning Association recently by E. J. Van Faasen, district sales representative for Temco, Inc., Nashville, Tenn. furnace manufacturer.

Van Faasen assured them that these steps constituted a tried and proven plan that had resulted in high volume, profitable sales for him during his years of selling furnaces at retail for Holland Furnace Co.

Here are the steps, as explained in Van Faasen's own words:

Step 1. Plan your work.

Plan with your employes what you want your sales program to accomplish. Hold a meeting or series of meetings with all employes, including mechanics, installers, salesmen, and office personnel.

Your group effort should focus on the following: How to do more prospecting. How to coordinate sales efforts better. How to sell product instead of price. How to develop more employe enthusiasm. How to justify higher prices that include a rightful profit. How to make more friends.

You and your employes are the showcase of your business. Each one of you must exhibit enthusiasm, tact, knowledge of product, and understanding of and interest in your prospects' needs.

I encourage you to stick your neck out occasionally on a sales idea. Behold the turtle. He makes no forward progress unless he sticks his neck out.

Decide what you want to do and how you will do it.

Step 2. Set rules.

You are all trying to play a winning game and it is impossible to determine a winner unless you first establish a set of rules to go by.

Set such rules for your organization as:

No prices quoted in the office or over the phone — only where the work is to be done.

No prices quoted without proper demonstration or interview.

No prices quoted or demonstration made unless all parties concerned are present.

No installations made on a time and materials basis, only on firm orders at a firm price.

You can add many rules that will fit your own operation. For example: "No written quotations" if your firm is strictly in the replacement business.

Adhering to rules can easily become a habit. Good habits develop good principles. Strive to become known as a firm with good sound principles.

Step 3. Develop a pitch or sales talk.

Here again all employes should participate in a brainstorming session. Take notes. Get answers to these questions:

What lines do we want to feature? Why?

What advantages does this equipment offer the prospect? Why?

What advantages does our company offer the prospect? Why?

Our service department? Why?

Discuss problems; analyze sales, service, the equipment you handle; why this sale was missed, that sale made.

(Van Faasen insists that salesmen rarely *lose* sales: they can't lose something they never had. But salesmen do *miss* sales.)

From this accumulation of benefits develop a sales story or pitch. Be able to tell the prospect "We handle this unit because . . ." and give only reasons that are advantages for the buyer.

Come up with benefits and reasons that will allow your employes to say "I work for this company because . . ." and the reasons again should include only customer benefits.

In developing this pitch, you should work carefully. It calls for a thorough study of what you are selling and what it and you offer the prospect so that your confidence and sincerity will be projected in such a manner as to impress him effectively.

It must have a basic conformity in its over-all structure and still be flexible enough to allow creative use of your own words. What is good for one salesman to say may be dead wrong for another. It must allow you to be yourself.

Step 4. Set a selling price.

Set a selling price *installed* for every piece of equipment you feature. Naturally this will have to be an "average" for figuring an "average" job.

It should be broken down to the price for each furnace set in, price for humidifier installed, price for wiring furnace, price per warm air opening, price per cold air opening, price per foot of each size gas line, elbows, etc.

This price list becomes the basis for all price figuring. All cost conversation thereafter with employes or prospects should refer to selling cost or customer cost.

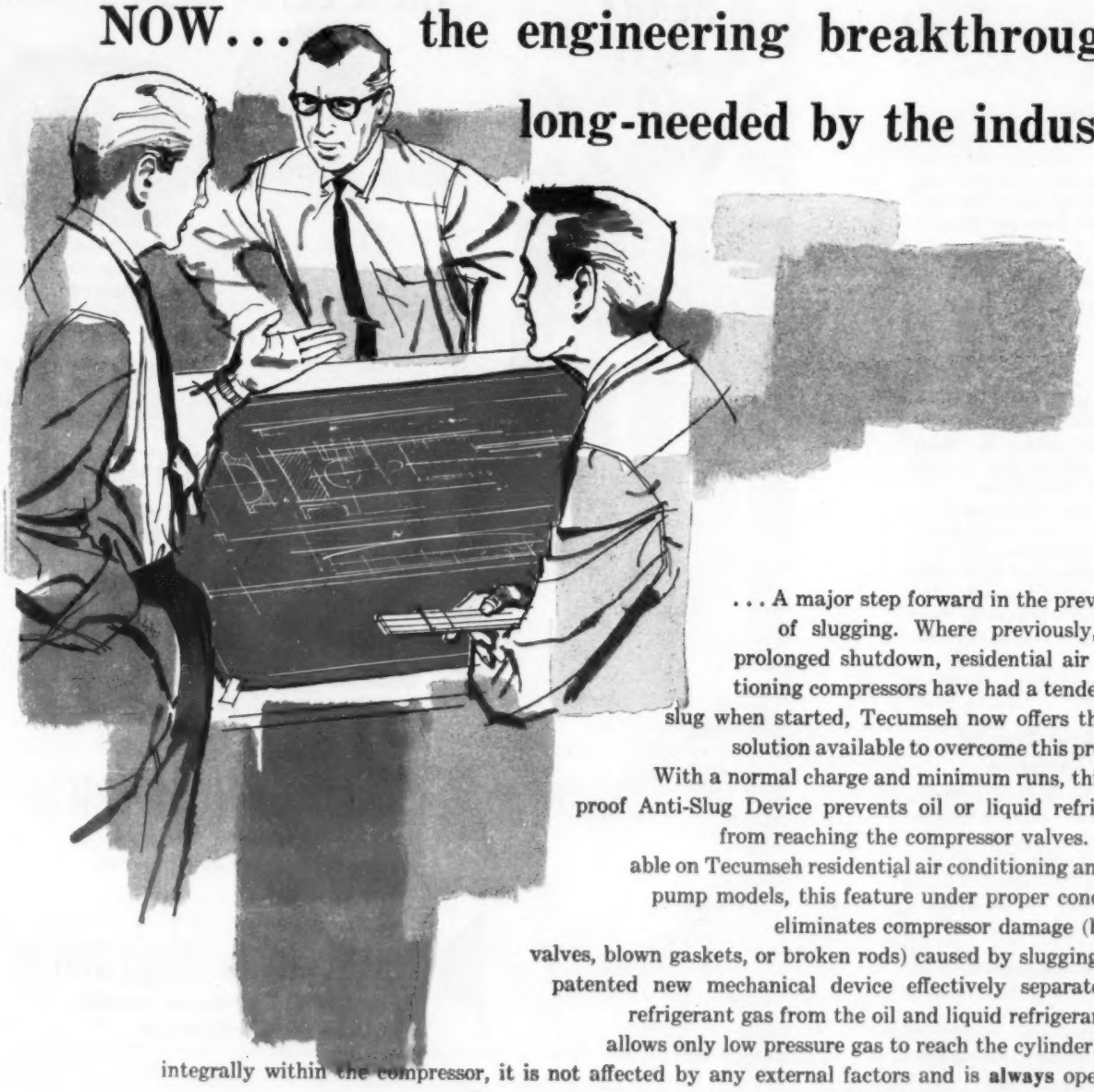
These first four steps have been organizational action. Now we start working with prospects.

Step 5. Outline a standard sales routine.

Outline a standard sales routine to be followed by all employes on each and every prospect you develop.

No prospect or suspect is waiting for you to call on him. All approaches to the prospect must be in his interest and to fill his need. Make every prospect a friend and every friend easily becomes a customer. Re-

NOW... the engineering breakthrough long-needed by the industry...



. . . A major step forward in the prevention of slugging. Where previously, after prolonged shutdown, residential air conditioning compressors have had a tendency to slug when started, Tecumseh now offers the best solution available to overcome this problem. With a normal charge and minimum runs, this foolproof Anti-Slug Device prevents oil or liquid refrigerant from reaching the compressor valves. Available on Tecumseh residential air conditioning and heat pump models, this feature under proper conditions eliminates compressor damage (broken valves, blown gaskets, or broken rods) caused by slugging. This patented new mechanical device effectively separates the refrigerant gas from the oil and liquid refrigerant and allows only low pressure gas to reach the cylinder. Built integrally within the compressor, it is not affected by any external factors and is **always** operating when the compressor is running.

A new internal thermostat developed at Tecumseh follows motor temperature with extreme accuracy and removes the compressor from the line at a safe temperature level. The thermostat like the Anti-Slug Device—is unaffected by outside variables and therefore protects the motor to extremely close limits. This is particularly critical in heat pump applications which operate over a wide range of ambients. These features are positive proof that Tecumseh alone offers the industry compressors specifically designed for the residential market.

air conditioning

BY PASS VALVE

Simplifies installing fan-coil or induction type air conditioners. Only ¼ size of average valve cluster, it combines function of inlet-outlet valves and flushing valves. Available with ½" or ⅝" solder or flare connections.

CLAYTON MARK & COMPANY
1900 Dempster St.
Evanston, Ill., U.S.A.

member all the rules we established in Step 2.

Request a home appointment. Insist on one. Your determination to arrange for adequate time to discuss and figure his individual needs will gain his full respect. If you cannot sell him on this step, I do not believe you can sell him a furnace.

This home demonstration calls for some advance preparation. You must have practiced your pitch so that it becomes near perfect in its usefulness. This could be a good reason for periodic sales meetings.

It calls for a well organized arrangement of your sales literature and material so that a fumbling delay will not indicate to the prospect that you are an amateur and don't make many sales.

Step 6. Introduction and qualification.

You are at the prospect's home now, in the living room.

Remember the rules. Talk to the right people. Don't give in to second hand selling. It's like second hand buying.

Get acquainted by asking questions.

Do you know our company? Do you own your house? How long? Was present equipment here when you bought? Is it worn out? Obsolete? Have you ever bought heating equipment before? What do you have in mind? What have you looked at? What do you expect a new heating plant to do for you? What do you expect to spend?

Unless you get favorable answers to these questions you might just as well leave. You aren't going to sell a furnace.

After receiving favorable answers to all these questions you should qualify further: This is what I would like to do for you. Tell why. If you have time I would like to check your present system to get an idea of what we can do for you, then show you what we have to offer.

If they qualify, you are stepping right up toward the sale. You have gotten acquainted and have become friends. But this all takes time and effort. Some dealers think it is easy and expect too much results from too little effort.

They run down into the basement, look around, and say "About so much, here's my card, call me." Then they wonder why they miss sales!

Step 7. Determine needs.

After the prospect agrees that you should check his system, give him a guided tour of his present heating system. Check all components carefully. Are the returns sized properly? The supply ducts? Explain your every move.

Now let the prospect tell you about his present system. Shut up and listen. Make sure Mama gets a chance to have her say. Let them dissatisfy themselves. You can assist them, naturally.

Bring up possible alternates from what you have decided to sell them. Help them eliminate these alternates.

Finally, say "Now I would like to show you what I have in mind, if you will let me."

Step 8. Demonstration.

You must talk and the prospect must listen, if there is to be a sale. Any effort by your prospect to control the conversation must be overcome.

Tell him you want his attention—questions later. To keep his complete attention, touch frequently on his needs, his activities, his desires.

Always assume your prospect knows nothing about your product or service. If he doesn't, he'll appreciate your thorough explanation. If he does, he will be pleased that you agree with what he already knows.

Specific interests motivate every purchase—pride of ownership, prestige, imitation of a neighbor, anticipated comfort, style, health, security or peace of mind. One or more of these interests must be aroused or there will be "no sale."

Include plenty of romance in your demonstration. Show it, tell about it, and use it.

Romance your product or parts of it. Who makes it, how it's made, why it's made this way instead of that, its acceptance and success, etc.

A sales presentation must have definite steps. You must bring your prospect to each step and "feel" his favorable reaction to that level before proceeding to the next step and ultimately the sale.

Sum up your presentation thoroughly, clearly, convincingly, then stop! Are there any questions? What do you think of our equipment? Will it do the job you want done?

Practical problems will pop up. Answer briefly and promptly. They become the next step toward the close.

Then the only question is price? Right? This is what I would like to do. I would like to figure your exact needs, changes, price to the penny, etc. If they qualify, you have completed your demonstration.

Step 9. Determine requirements.

Measure walls, windows, doors throughout the house. Take heat loss. Be extra thorough. Make sure the prospect knows you are being thorough.

Make up scratch sheets listing materials to be used, model furnace, humidifier, number of warm air outlets, number of cold air outlets, specific changes —all work to be performed.

Step 10. Figure the costs.

Now figure the costs—selling costs. Qualify for figuring. I would like to figure this installation exactly as though this were my home. Would you like to have me do it that way?

If the prospect is sincerely concerned about expense, he has only one sensible approach to his situation: The less he has to spend, the more he needs value for his dollar. Remind him of the Chinese proverb: Cheap things have no value. Valuable things are never cheap.

Step 11. Summarize and quote the price.

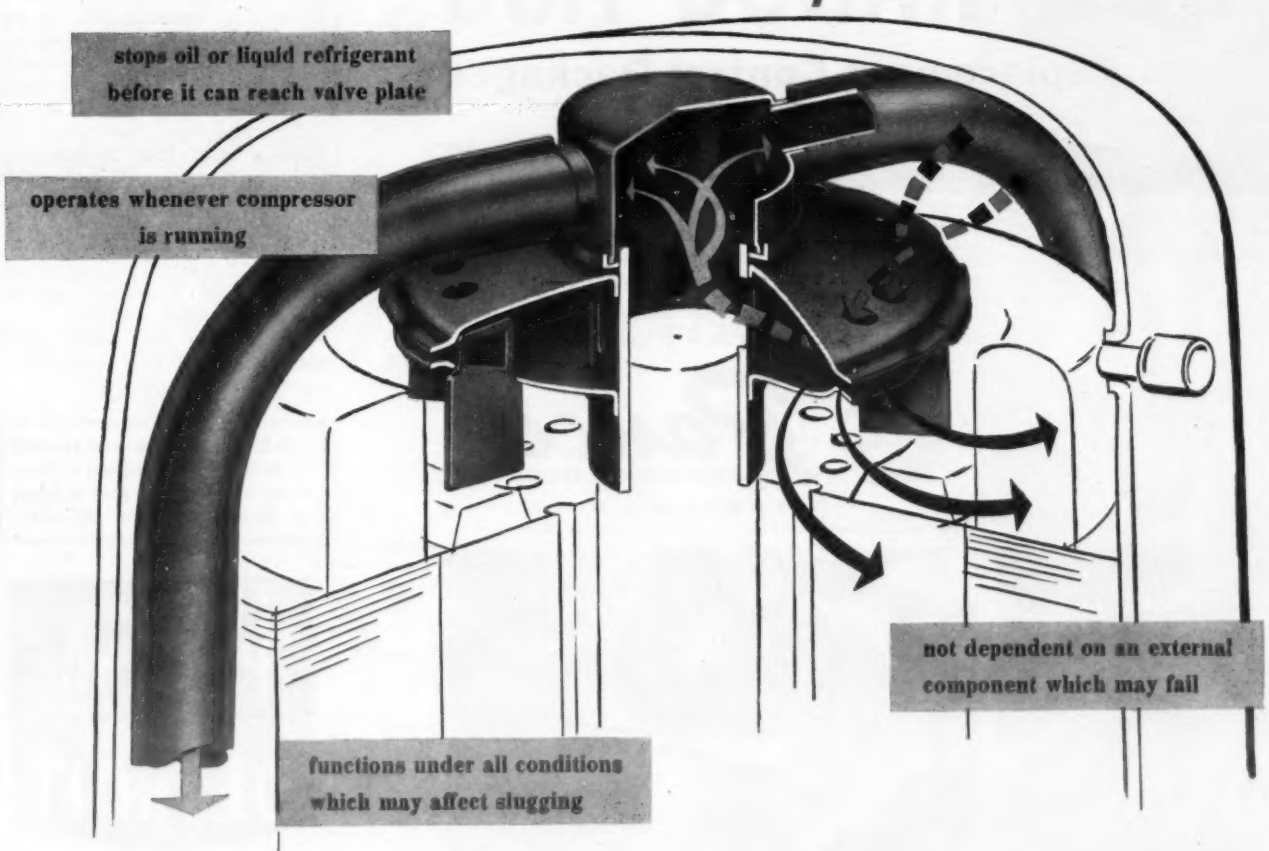
Now take it easy! This is the negotiation point. Both your mind and the prospect's mind must be at complete ease and in complete agreement.

(Continued on next page)

12 Steps to Better Sales

- Plan your work.
- Set rules.
- Develop a pitch or sales talk.
- Set a selling price.
- Outline a standard sales routine.
- Introduction and qualification.
- Determine needs.
- Demonstration.
- Determine requirements.
- Figure the costs.
- Summarize and quote your price.
- Close.

TECUMSEH'S exclusive *NEW* ANTI-SLUGGING *FEATURE*


stops oil or liquid refrigerant before it can reach valve plate
operates whenever compressor is running
not dependent on an external component which may fail
functions under all conditions which may affect slugging

The new Tecumseh Anti-Slug Device consists basically of two assemblies. One is the centrifuge which is press-fit on the crankshaft and therefore rotates at the speed of the compressor. The suction of the piston pulls in the refrigerant and oil mixture in the dome through the holes on top. The paddles help in breaking up this mixture and the liquid refrigerant and oil are expelled through the slots by centrifugal force. The gas, being lighter, is drawn through the slots in the hub. The second assembly is merely a collection pan which has two tubes leading to the cylinder heads and the valves. This assembly is stationary and fits over the hub of the centrifuge, directing the gas to the cylinders. With a normal charge, little if any oil or liquid refrigerant reaches the valves, thus greatly minimizing the possibility of slugging. This exclusive feature is one more example of industry progress made possible by Tecumseh engineering advancements.

forty million compressors in the field

TECUMSEH PRODUCTS COMPANY

MARION, OHIO
TECUMSEH, MICHIGAN

FOREIGN OPERATIONS DIVISION Tecumseh, Michigan

CANADA: Tecumseh Products of Canada, Limited, 1667 Dundas St., London, Ont.

12 Steps to Successful Selling--

(Continued from preceding page)

There is only one time for closing if you quote the price. You must close the sale NOW, while you are there. Or forget him and get a fresh prospect.

Make up your mind to make up his mind. How do you want me to figure? FHA? Cash? etc. By the way, when can we do this work? At our convenience or at yours?

Sum up for the prospect all the details you are going to take care of for his comfort. Explain all the benefits to him. Give him your price.

Step 12. Close.

Without hesitation you must exhibit and express your assumption that he has purchased and that there are only a few minor details to be worked out.

Would you like this register or that one? Should we locate the furnace a little closer to the chimney facing this way or that way? Fine, I'll mark that down. Write, write, write.

After writing the agreement, you should qualify them again to their wise decision. It could have been cheaper if you had cut some corners, etc. Then leave and you have a good solid sale.

A thorough knowledge of plan and product will allow elaboration and enlargement on any point or points which appear to catch buyer's interest.

After practice, the alert salesman will not always complete his presentation according to outline. He may be able to pass over a step here or there. But these steps are still present —and must remain in sequence. You need them to catch yourself in case you start slipping.

But you must practice and even develop indifference to the outcome of a specific demonstration. You may miss a deal or two until it becomes a fixed habit. Then sales will increase as your proficiency increases. Its power comes from practice.

Let your competitor take the prospect for granted. Don't you. Emphasize what your competitor can't or doesn't.

People want to buy things they understand best. So a well-timed enthusiastic demonstration of your product and your ideas will produce results where plain conversation fails. You must tell to sell. Half of a sale depends on what you say, half on how you say it.

In the eyes of the prospect, you can be a *champ* or a *chump*. The only difference is U.

Burgess Jennings Returns to Staff At Northwestern

EVANSTON, Ill. — Among new and returning faculty members in the mechanical and industrial engineering departments at Northwestern university, announced for this fall by Dean Harold B. Gotaas of the Technological Institute, is Burgess Jennings, professor of mechanical engineering, returned from leave.

Prof. Jennings returns to Northwestern after a three-year leave, during which he was director of research for the American Society of Heating, Refrigerating & Air-Conditioning Engineers.

He had been chairman of the mechanical engineering department at Northwestern from 1943 to 1957. During the leave, he directed work of a 25-man group which examines problems of environment control.

One project he hopes to begin at Northwestern: an examination of problems of ventilation and air contamination in schools. With today's high fuel costs for heating and freshening air, he hopes to learn what is the minimum rate of fresh air flow for student health and work efficiency.

He notes that while some city school codes require 30 cfm of fresh air per student, others require as little as five. He believes that optimum level is somewhere in between.

Modine To Reorganize New York Territory

RACINE, Wis.—Modine Mfg. Co. announced plans to reorganize its New York sales territory as a prelude to providing increased customer service.

Key step in the realignment, according to Cary C. Wilson, Modine vice president in charge of sales, is the naming of R. S. (Shep) Doherty as sales representative for the territory.

Doherty recently announced that he was resigning as vice president of the A. W. Cash Valve Co., Decatur, Ill., to return to New York to open his own manufacturers' representation business. He plans to open an office at Mt. Kisco, N. Y.

Doherty said he plans to build a staff that is not only technically equipped but sales minded in helping Modine wholesalers. He announced that R. T. Angevine, now a partner in R. S. Doherty Co., will direct thi activity. Angevine has resigned as chief engineer of C. R. Bernstrom, Inc., producer of shell and tube heat exchangers and heating specialties.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

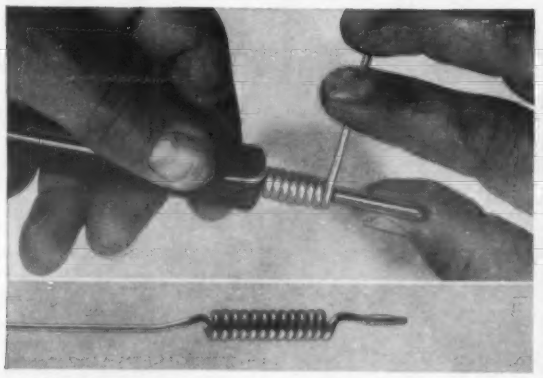
Now you can handle 90% of your replacement control calls with just 24...

NEW RANCO A30

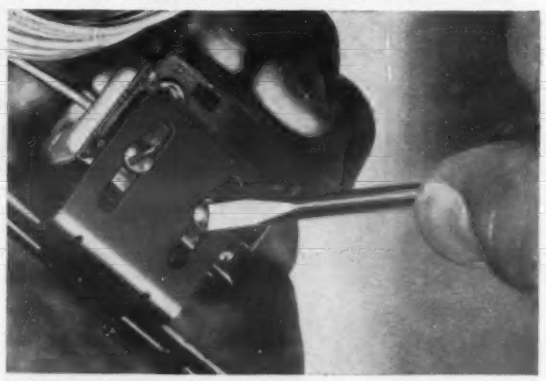
Replacement Control Packages

Imagine! Only 24 basic controls and installation packages and you're in business to handle 9 out of every 10 control calls. Installation is fast and simple . . . you've everything you need to do the job on the spot. And you know it will be done right the first time. You service more jobs per day, boost your weekly profits. Be sure to see your wholesaler about new A30 Replacements today!

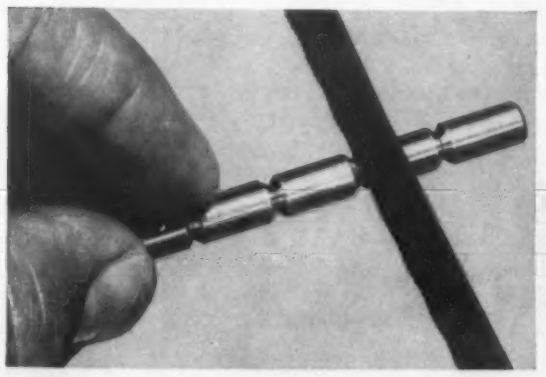
Ranco® INCORPORATED
COLUMBUS 1, OHIO
In Canada: Ranco Controls, Canada Ltd., Toronto 18, Ontario



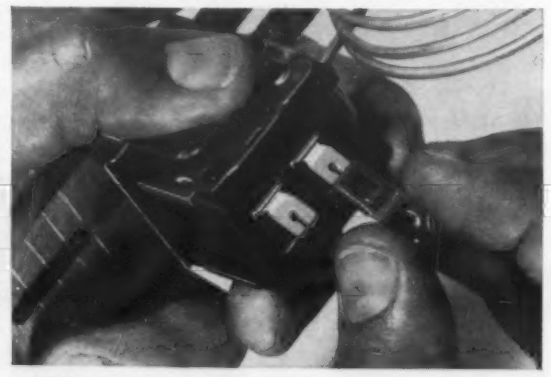
SHAPE the capillary tube (if necessary) with Ranco's new capillary forming tool available from your wholesaler.



ADJUST the mounting bracket on the new A30 Replacement for height and mounting hole spacings.



SAW dial shaft extension (unattached to control) to adapt it to any desired length and insert it in the Ranco A30 Replacement.



ADD terminal adapter clips (if necessary) and the A30 Replacement is ready for fast installation.

FREE overnight PARKING
(while space is available)
FOR REGISTERED GUESTS IN DOWNTOWN
DETROIT

Special FAMILY RATES
No Charge for Children 12 and Under

In the center of all downtown activities. Newly decorated. Ultra modern, comfortable guest rooms. Excellent food at moderate prices in our modern coffee shop and cafeteria.
Radio, Television Room Available.
Air Conditioned rooms in season.

800 ROOMS WITH BATH from $4

Hotel TULLER
FACING GRAND CIRCUS PARK
DETROIT, MICHIGAN
Harry E. Paulsen, Gen. Mgr.

Gas-Fired Unit Heaters Aid Turkey Farmer By Providing Necessary Auxiliary Heat

INTERIOR of turkey brooder house at Wellman, Iowa's famed Maplecrest Turkey Farm, where Reznor unit heaters are used for auxiliary heat during winter brooding season. Four 100,000 Btu Reznor heaters in the 300-ft-long building permit these poults to roam freely in spite of frigid outdoor temperatures. The Reznor heaters are held at constant 70°F temperature while temperature of brooder stoves (behind posts) range downward from 95° to 70° as poults mature.

WELLMAN, Iowa — Use of gas-fired unit heaters as auxiliary heat make possible the early (January and February) brooding of Thanksgiving turkeys at the Maplecrest Turkey Farm here.

The farm produces over 800,000 birds a year and has annual sales in excess of $4 million.

"Turkeys are among the most sensitive creatures alive," declared Bob Godlove, vice president and general manager of Maplecrest Farm. "You've got to have good auxiliary heat if you want to raise them profitably during the colder months.

"Otherwise the poults (young turkeys) won't come out from under the brooders for food and water in cold, damp weather, and will starve to death.

"In addition, you use much less fuel in the long run with auxiliary heat than if you depend on brooder heat alone."

Bill Swartzendruber, Maplecrest maintenance engineer, designed the auxiliary heat system 10 years ago. He selected unit heaters manufactured by Reznor Mfg. Co. for the job. They were installed by his crew with assistance from Home Gas Co., Wellman, from whom they were purchased. Home Gas periodically checks the equipment and inspects the fuel piping system.

Swartzendruber specified four 100,000 Btu fan-type, suspended Reznor unit heaters in each of six 300-ft-long brooder houses which Maplecrest uses for winter brooding.

Fueled from liquified propane gas reservoirs, the heaters are mounted down the center of one side of the 37-ft-wide wood frame buildings, with the brooders mounted down the opposite side.

The heaters are individually controlled by thermostats mounted 4 ft above the ground on posts adjacent to each heater and about 6 ft from the nearest brooder. Each heater is vented immediately through the corrugated metal roof.

The turkey poults are kept in the brooder buildings until they are eight weeks old, then are sold either to growers to raise for marketing, or go directly to Maplecrest's own farms.

The Reznors are maintained at a constant 70°F. Temperature of the brooder stoves varies, starting at 95° and dropping 5° each week until reaching 70°.

"The auxiliary heat system is an unequivocally successful one," says Tom Russell, Maplecrest's vice president in charge of hatchery and farms.

"There is no question but that the mortality rate is down markedly since we installed the Reznors, although it's impossible to say how much is due to the heaters alone because of the many variables involved such as relative dampness, weather severity, and the increasing number of birds we are raising each year."

Russell reports that many poultrymen have visited Maplecrest turkey farm to inspect the installation after hearing of its success, and a number of them have copied it on their own farms.

"Other farms in our area also have made similar installations in milking parlors and are using them for year-round pig farrowing," Russell says. "In addition, we have installed unit heaters in our garage, two well houses, and in the Christmas packaging room where we specially-wrap our Maplecrest turkeys for the year-end holiday season."

Thomas Merryweather Of Akron Dies at 81

AKRON, Ohio — Thomas Merryweather, 81, founder and retired president of Merryweather Co., wholesale distributor of heating supplies, died recently at his home. He founded the firm in 1925.

Brooklyn Utility Offers Money-Back Test Plan

BROOKLYN — The Brooklyn Union Gas Co., in a recent newspaper advertisement, urged readers to "try gas heat on a money-back test."

The ad said, in part:

"A Brooklyn Union specialist will make a free heating survey of your home. You'll get a written, certified estimate of your gas-heating costs for one year. If actual costs top the estimate, we'll remove the equipment and refund your payments."

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

"With ScottFoam filters, air flows more freely in our new line of high-velocity air furnaces"

says
Mr. William L. Regan, Packaged Products Sales Manager, Airtemp Division, Chrysler Corporation, Dayton, Ohio

"The unit blowers in our new 4200-03 Series furnaces have to be larger because the furnaces are designed primarily for air conditioning applications. We accomplish the higher airflow needed by using ScottFoam filters with our larger blower sizes.

"Our plant employees also like ScottFoam filters. They're easy to handle. And safe. There are no spun glass slivers to bite into a worker's hands — or cause harmful skin irritations.

"And here's a customer benefit. ScottFoam filters are the permanent type. They can be washed when they become dirty, eliminating the need for replacing, as with commonly-used throw-away filters."

SCOTTFOAM
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SEND FOR FREE BOOKLET

Consider the use of ScottFoam filters in your air-handling equipment. To get the complete story, write for this new booklet — *ScottFoam Filter Media.* Use the handy coupon.

Manager, Industrial Sales, Foam Division
Scott Paper Company, 15831 W. 7 Mile Road
Detroit 35, Michigan

Please send me a **free** copy of your new booklet — ScottFoam Filter Media.

Name_____
Title_____
Company_____
Address_____
City_____ Zone_____ State_____
I'm presently using the following types of filters:_____

'Call a Licensed Plumber First' Is Theme of North Jersey Drive

RESIDENTS of Bergen and Passaic recently saw these bright green and white signs reading "Call a Licensed Plumber First" on the sides of their local plumber's trucks. Seen here at the kickoff of the campaign to inform the public of the advantages of using experts for all plumbing and heating installation and repairs are (l. to r.) Peter Block, Prospect Park, vice president of the Paterson Master Plumbers' Assn.; John Spoor, Franklin Lakes, president, N. Bergen M.P.A.; Ralph J. Pepe, Hasbrouck Heights, vice president of the S. Bergen M.P.A.; A. H. Paetzold, Wyckoff, president, Hawthorne M.P.A.; Alan Aufzien, Ral Supply Co., Passaic; Herman Zitcer, Sachs & Zitcer Supply Co., Paterson, president of the North Jersey Credit and Trade Club; "Miss Licensed Plumber" (Nancy Cerrato, Cedar Grove; William Gatsik, Jersey State Plumbing & Heating Supply, Hackensack; Albert Baker, Passic Valley Supply Co., Paterson, vice president of the North Jersey Credit and Trade Club; and Morris Poster, Ridgewood Plumbing Supply, Ridgewood, chairman.

* * *

MONTCLAIR, N. J.—An all-out effort to combat "direct to user" selling in the plumbing industry through public relations at the local level has been initiated by a New Jersey wholesalers' association.

The North Jersey Credit & Trade Club, an association of approximately 25 wholesale distributors of plumbing supplies in Passaic and Bergen counties in New Jersey, is financing the entire project.

They have retained the advertising and public relations firm of Josephson, Cuffari & Co. here to handle the entire campaign. Eleven master plumbers' associations in the two counties are actively cooperating with the wholesalers' group.

"The first step in the vertical mutual effort went into operation the last week of August with the appearance of panel signs on service trucks in both counties," it was reported. "The signs were inserted into metal frames attached to the sides of the trucks and read 'Call A Licensed Plumber First.'

"The metal frames and the waterproofed signs were supplied free to the local plumbers by the wholesalers' group. Posters with different messages will be supplied regularly.

Herman Zitcer, president of the North Jersey Credit & Trade Club, has pointed out:

"This poster project is only the initial step in an over-all campaign for wholesalers and master plumbers to work mutually to combat 'direct to user' selling and inform the public that calling a licensed plumber first costs less in the long run for any installation or repairs. 'Do-it-yourself' or inept handyman efforts usually are more expensive in the end."

Zitcer emphasized that the posters are only one phase of the information project. He said that in the months ahead the promotional committee of the wholesalers and master plumbers, working with Josephson, Cuffari & Co., would expand their activities into other areas such as billboard advertising, informational brochures for consumers, pictorial sales aids, legal counsel, etc.

Commented Zitcer: "We feel that this is the first time such an information campaign has been carried out in such detail at the local level."

Manufacturers' Electric Heating Shipments For '59 Hit $27.8 Million Mark — BDSA

WASHINGTON, D. C.—Manufacturers' shipments of electric heating equipment amounted to $27.8 million in 1959, possibly a record volume, the Business and Defense Services Administration of the U. S. Dept. of Commerce reports.

These first figures gathered and published by the department include only electric heating equipment which is permanently attached and an integral part of a building structure. It does not include portable electric heaters.

Data was obtained from a survey of all known manufacturers of electric heating equipment conducted by the Building Materials Div. of B.D.S.A. This survey is part of a more extensive study presently being made of most segments of the heating equipment industry.

(For statistics on cast iron boiler and radiation shipments, see page 18, Aug. 8 issue of NEWS.)

Shipments by 58 electric heating equipment manufacturers are included in the reported total of $27,834,294 in 1959. Analysis of this total by type of equipment is found in Table 1.

Shipments of electric baseboard radiation equipment accounted for nearly 30% of total shipments, following the upward trend of baseboard radiation utilized in the wet-heat systems.

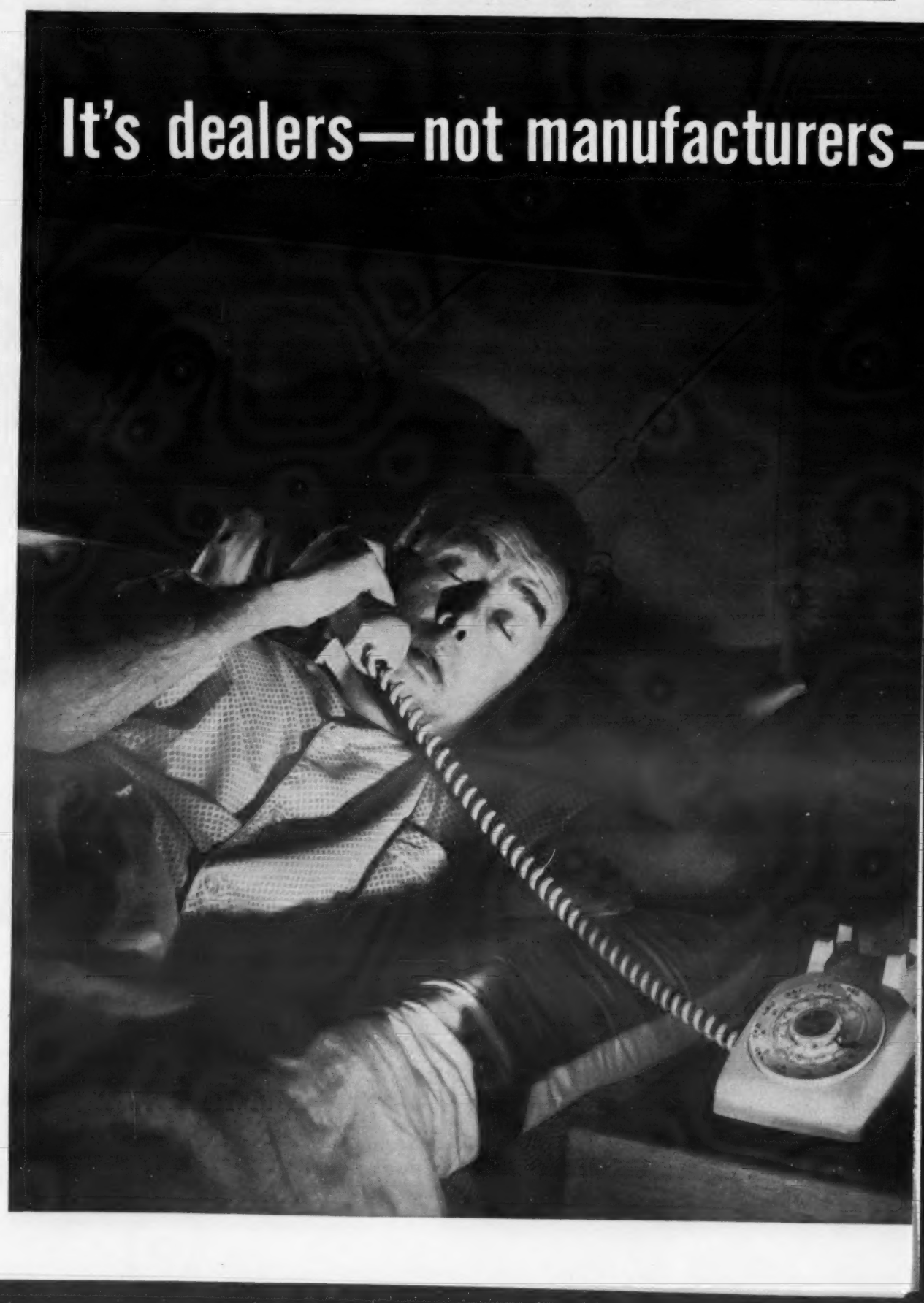
Convector type radiation and baseboard radiation together accounted for slightly more than 65% of total shipments.

Although the principal market for electric heat is in new-home construction and rehabilitation of existing dwellings, Charles P. Redick, director of the Building Materials Div., commented, it is also adaptable for commercial structures.

Unit heaters are used mainly in commercial and industrial installations. Unit ventilators are primarily used in commercial and school construction.

Regional destination of elec-

It's dealers—not manufacturers—



tric heating equipment shipments is set forth in Table 2.

More than 21% of reported shipments were to the Pacific Coast states. The east north central region—Illinois, Indiana, Michigan, Ohio, and Wisconsin—received slightly more than 15%.

Redick commented that "based upon 1959 shipments, it appears that the use of electricity as the heat producing medium has assumed growing importance in the heating field, previously dominated by gas and oil.

"Promotional effort by electric utilities and others is apparently producing results, especially in the market for residential heating systems.

"Electric heat, of course, is adabtable for use in warm air furnaces or wet heat installations.

"The annual volume of heat producing equipment manufactured for habitable structures is approximately $387 million, including electric heat, warm air furnaces, and steel and cast iron heating boilers.

"Of this total, approximately 46% use gas as a heat source, 42% oil, 7% electricity, and 5% solid fuel.

"Of the manufacturers contacted in the survey, 13 stated that they did not manufacture electric heating equipment in 1959 but that production was contemplated in 1960 or soon after.

"Evaluating these facts, and industry opinion, it appears that more electric heating equipment should be sold in 1960 than in 1959.

"It would also appear, with lower electric rates for heating, that electric heating equipment will be come increasingly competitive with other types of heating equipment in the ensuing years," Redick concluded.

Table 1—Electric Heating Equipment: Manufacturers' Value of Shipments In 1959 and Btuh Output

Type of equipment	Output in thousands of Btuh	Total dollar value	Percent of total (dollar value)	Units
Baseboard (not including glass panels)	9,571,986	$ 8,325,587	29.9	2,269,880*
Convectors:				
Without fan	1,618,280	5,596,254	20.1	330,395
With fan	1,138,839	4,250,219	15.3	152,650
Glass panels:				
Baseboard	590,819	660,936	2.4	..
Radiant	234,101	1,432,897	5.1	..
Unit heaters and unit ventilators	666,601	5,654,322	20.3	171,842
Warm air furnaces:				9,482
Central	54,660	88,828	0.3	..
Floor	21,807	51,701	0.2	..
Wall	66,760	210,522	0.8	..
Cable systems fabricated as:				
Units	589,239	1,095,607	3.9	123,324
Cable only	85,520	467,421	1.7	..
Total	**14,638,612**	**$27,834,294**	**100.0**	..

Source: Department of Commerce (BDSA).

*Lineal feet.

Table 2—Electric Heating Equipment: 1959 Value and Percentage Distribution by Destination of Shipments

Census geographic division	Shipments Value	Shipments Percent
New England	$ 1,209,725	4.3
Middle Atlantic	2,595,842	9.3
East North Central	4,208,720	15.1
West North Central	2,354,100	8.5
South Atlantic	2,892,600	10.4
East South Central	3,705,907	13.3
West South Central	1,382,117	5.0
Mountain	916,472	3.3
Pacific	5,961,755	21.4
Exports	82,921	0.3
Destination of shipments not available because of method of distribution of six manufacturers	2,524,135	9.1
Total	**$27,834,294**	**100.0**

Source: Department of Commerce (BDSA).

Detroit Conditioning Group Taking Steps To Join State Assn.

DETROIT — Negotiations to bring the Detroit Heating & Air Conditioning Association into the Michigan Heating & Sheet Metal Association were approved in principle by members of the Detroit group recently. There was no dissent.

Negotiations involve demands by the board of directors of the Detroit group that the organization of the state group be revised to make it a more effective spokesman for the heating industry on the state level.

The Detroit group has never been a member of the state group, though individuals within the Detroit group are also members of the state association. In fact, Al Keats, a member of the Detroit group, is president of the state association.

Keats expressed confidence that with the vote of approval by the membership, differences could be ironed out rapidly and the Detroit group, largest local heating association in the state, would be brought into the state organization.

With Detroit's strength added to that of present members—local associations in Macomb county, Grand Rapids, Kalamazoo, Lansing, and Benton Harbor—efforts could be made to get uniform heating ordinances throughout the state and carry on an educational program for members.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

—who get called out at night

The manufacturer sleeps snugly—all night long—although the Smiths may call *you* at 2 A.M. Their furnace has stopped running, it's miserably cold outside—and the baby is sick. Who crawls out of bed, makes the hurried service call in the pre-dawn darkness? Not the manufacturer!

An awareness of this fact shapes the product and policies of Lennox. It's one of the reasons you, the dealer, are recognized as the most important person in the entire organization.

As a businessman—with plenty of problems of your own—you're entitled to the very best help and cooperation from your equipment suppliers. Lennox takes this responsibility seriously—and it's the heart beat of the direct factory to dealer relationship.

If you're not a Lennox dealer, find out now what you've been missing.

LENNOX Industries Inc.

Established 1895

Marshalltown, Iowa • Columbus, Ohio • Syracuse, N.Y. • Fort Worth, Texas
Salt Lake City, Utah • Decatur, Ga. • Los Angeles, Calif. • Des Moines, Iowa
Lennox Industries (Canada) Ltd. • Toronto, Montreal, Calgary and Vancouver

'Call a Licensed Plumber First' Is Theme of North Jersey Drive

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MONTCLAIR, N. J.—An all-out effort to combat "direct to user" selling in the plumbing industry through public relations at the local level has been initiated by a New Jersey wholesalers' association.

The North Jersey Credit & Trade Club, an association of approximately 25 wholesale distributors of plumbing supplies in Passaic and Bergen counties in New Jersey, is financing the entire project.

They have retained the advertising and public relations firm of Josephson, Cuffari & Co. here to handle the entire campaign. Eleven master plumbers' associations in the two counties are actively cooperating with the wholesalers' group.

"The first step in the vertical mutual effort went into operation the last week of August with the appearance of panel signs on service trucks in both counties," it was reported. "The signs were inserted into metal frames attached to the sides of the trucks and read 'Call A Licensed Plumber First.'

"The metal frames and the waterproofed signs were supplied free to the local plumbers by the wholesalers' group. Posters with different messages will be supplied regularly.

Herman Zitcer, president of the North Jersey Credit & Trade Club, has pointed out:

"This poster project is only the initial step in an over-all campaign for wholesalers and master plumbers to work mutually to combat 'direct to user' selling and inform the public that calling a licensed plumber first costs less in the long run for any installation or repairs. 'Do-it-yourself' or inept handyman efforts usually are more expensive in the end."

Zitcer emphasized that the posters are only one phase of the information project. He said that in the months ahead the promotional committee of the wholesalers and master plumbers, working with Josephson, Cuffari & Co., would expand their activities into other areas such as billboard advertising, informational brochures for consumers, pictorial sales aids, legal counsel, etc.

Commented Zitcer: "We feel that this is the first time such an information campaign has been carried out in such detail at the local level."

Manufacturers' Electric Heating Shipments For '59 Hit $27.8 Million Mark—BDSA

WASHINGTON, D. C.—Manufacturers' shipments of electric heating equipment amounted to $27.8 million in 1959, possibly a record volume, the Business and Defense Services Administration of the U. S. Dept. of Commerce reports.

These first figures gathered and published by the department include only electric heating equipment which is permanently attached and an integral part of a building structure. It does not include portable electric heaters.

Data was obtained from a survey of all known manufacturers of electric heating equipment conducted by the Building Materials Div. of B.D.S.A. This survey is part of a more extensive study presently being made of most segments of the heating equipment industry.

(For statistics on cast iron boiler and radiation shipments. see page 18, Aug. 8 issue of NEWS.)

Shipments by 58 electric heating equipment manufacturers are included in the reported total of $27,834,294 in 1959. Analysis of this total by type of equipment is found in Table 1.

Shipments of electric baseboard radiation equipment accounted for nearly 30% of total shipments, following the upward trend of baseboard radiation utilized in the wet-heat systems.

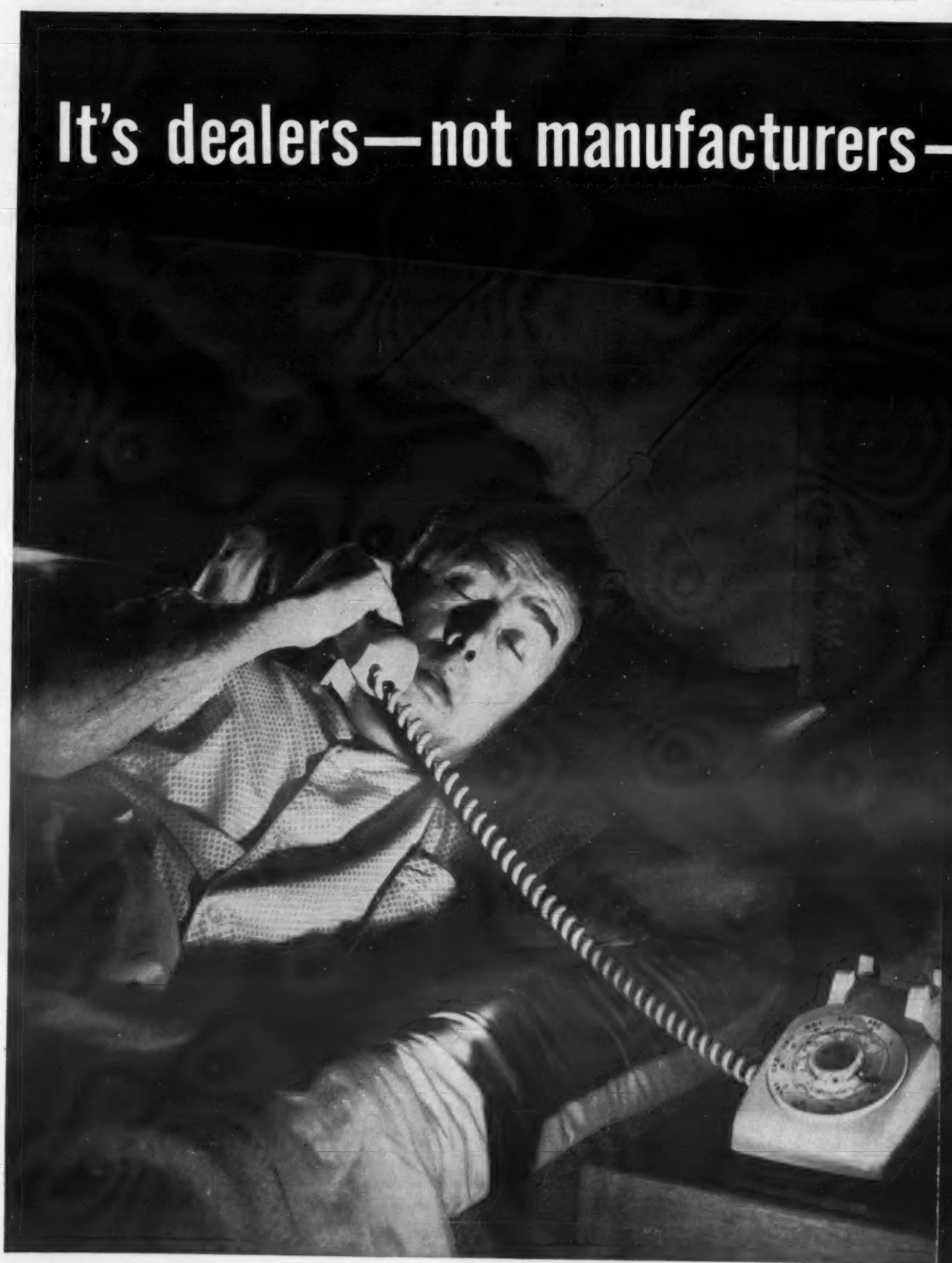
Convector type radiation and baseboard radiation together accounted for slightly more than 65% of total shipments.

Although the principal market for electric heat is in new-home construction and rehabilitation of existing dwellings. Charles P. Redick, director of the Building Materials Div., commented, it is also adaptable for commercial structures.

Unit heaters are used mainly in commercial and industrial installations. Unit ventilators are primarily used in commercial and school construction.

Regional destination of elec-

It's dealers—not manufacturers—



tric heating equipment shipments is set forth in Table 2.

More than 21% of reported shipments were to the Pacific Coast states. The east north central region—Illinois, Indiana, Michigan, Ohio, and Wisconsin—received slightly more than 15%.

Redick commented that "based upon 1959 shipments, it appears that the use of electricity as the heat producing medium has assumed growing importance in the heating field, previously dominated by gas and oil.

"Promotional effort by electric utilities and others is apparently producing results, especially in the market for residential heating systems.

"Electric heat, of course, is adabtable for use in warm air furnaces or wet heat installations.

"The annual volume of heat producing equipment manufactured for habitable structures is approximately $387 million, including electric heat, warm air furnaces, and steel and cast iron heating boilers.

"Of this total, approximately 46% use gas as a heat source, 42% oil, 7% electricity, and 5% solid fuel.

"Of the manufacturers contacted in the survey, 13 stated that they did not manufacture electric heating equipment in 1959 but that production was contemplated in 1960 or soon after.

"Evaluating these facts, and industry opinion, it appears that more electric heating equipment should be sold in 1960 than in 1959.

"It would also appear, with lower electric rates for heating, that electric heating equipment will be come increasingly competitive with other types of heating equipment in the ensuing years," Redick concluded.

Table 1—Electric Heating Equipment: Manufacturers' Value of Shipments In 1959 and Btuh Output

Type of equipment	Output in thousands of Btuh	Total dollar value	Percent of total (dollar value)	Units
Baseboard (not including glass panels)	9,571,986	$ 8,325,587	29.9	2,269,880*
Convectors:				
Without fan	1,618,280	5,596,254	20.1	330,395
With fan	1,138,839	4,250,219	15.3	152,650
Glass panels:				
Baseboard	590,819	660,936	2.4	..
Radiant	234,101	1,432,897	5.1	..
Unit heaters and unit ventilators	666,601	5,654,322	20.3	171,842
Warm air furnaces:				9,482
Central	54,660	88,828	0.3	..
Floor	21,807	51,701	0.2	..
Wall	66,760	210,522	0.8	..
Cable systems fabricated as:				
Units	589,239	1,095,607	3.9	123,324
Cable only	85,520	467,421	1.7	..
Total	**14,638,612**	**$27,834,294**	**100.0**	..

Source: Department of Commerce (BDSA).

*Lineal feet.

Table 2—Electric Heating Equipment: 1959 Value and Percentage Distribution by Destination of Shipments

Census geographic division	Shipments Value	Shipments Percent
New England	$ 1,209,725	4.3
Middle Atlantic	2,595,842	9.3
East North Central	4,208,720	15.1
West North Central	2,354,100	8.5
South Atlantic	2,892,600	10.4
East South Central	3,705,907	13.3
West South Central	1,382,117	5.0
Mountain	916,472	3.3
Pacific	5,961,755	21.4
Exports	82,921	0.3
Destination of shipments not available because of method of distribution of six manufacturers	2,524,135	9.1
Total	**$27,834,294**	**100.0**

Source: Department of Commerce (BDSA).

—who get called out at night

The manufacturer sleeps snugly—all night long—although the Smiths may call *you* at 2 A.M. Their furnace has stopped running, it's miserably cold outside—and the baby is sick. Who crawls out of bed, makes the hurried service call in the pre-dawn darkness? Not the manufacturer!

An awareness of this fact shapes the product and policies of Lennox. It's one of the reasons you, the dealer, are recognized as the most important person in the entire organization.

As a businessman—with plenty of problems of your own—you're entitled to the very best help and cooperation from your equipment suppliers. Lennox takes this responsibility seriously—and it's the heart beat of the direct factory to dealer relationship.

If you're not a Lennox dealer, find out now what you've been missing.

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Salt Lake City, Utah • Decatur, Ga. • Los Angeles, Calif. • Des Moines, Iowa
Lennox Industries (Canada) Ltd. • Toronto, Montreal, Calgary and Vancouver

Detroit Conditioning Group Taking Steps To Join State Assn.

DETROIT — Negotiations to bring the Detroit Heating & Air Conditioning Association into the Michigan Heating & Sheet Metal Association were approved in principle by members of the Detroit group recently. There was no dissent.

Negotiations involve demands by the board of directors of the Detroit group that the organization of the state group be revised to make it a more effective spokesman for the heating industry on the state level.

The Detroit group has never been a member of the state group, though individuals within the Detroit group are also members of the state association. In fact, Al Keats, a member of the Detroit group, is president of the state association.

Keats expressed confidence that with the vote of approval by the membership, differences could be ironed out rapidly and the Detroit group, largest local heating association in the state, would be brought into the state organization.

With Detroit's strength added to that of present members—local associations in Macomb county, Grand Rapids, Kalamazoo, Lansing, and Benton Harbor—efforts could be made to get uniform heating ordinances throughout the state and carry on an educational program for members.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

They'll Do It Every Time

by

Jimmy Hatlo

LEND ME YOUR PEN, ROSIOLA--OH, CHEDDAR--HAVE YOU GOT AN AIR-MAIL STAMP? HEY, GASPAYNE--LET ME TRY ONE OF THOSE NEW CIGARETTES OF YOURS, WILLYA?
THIS TIME I PUT MY FOOT DOWN!! I'LL GIVE HIM A STAMP RIGHT IN HIS UGLY KISSER!!
J'EVER ASK HIM FOR ANYTHING? HE WOULDN'T GIVE YOU A GESUNDHEIT IF YOU HAD GALLOPING PNEUMONIA--
HIS COAT OF ARMS IS A FREE LUNCH ON A FIELD OF UNSIGNED I.O.U.'S!
I BOUGHT A COMB AT THE TRICK STORE--IT'S FULL OF ITCHING POWDER--THAT I'LL GLADLY LEND HIM--
9-14
SAYING A GOOD WORD ABOUT THE OFFICE MOOCH EXPERT----
THANK AND A TIP OF THE HATLO HAT TO JOE MILLER, 10 N. B'WAY, WHITE PLAINS, N.Y.
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How to Make Money in the Real Estate Business (Air Condition It)

IN THE REAL ESTATE BUSINESS air conditioning recently has become a major factor. It affects the valuation, plus the leasing or rental appreciability, of virtually all types of real property.

Ten years ago it was big news if a projected office building, hotel, or hospital was to be air conditioned.

In those days "industrial" air conditioning indicated expensive luxury.

How times have changed!

Currently it would be surprising if a new big building *weren't* air conditioned. No longer is air conditioning considered a frill.

It is a "must" if owners of commercial or industrial property want to assure themselves of full occupancy at maximum rents.

Profitability-effects of air conditioning on the real estate economy clearly are evident in the field of multiple-rented residential property—apartments and such.

Let us digress momentarily, and then hurry back to make a point.

Today realtors face up to this seemingly paradoxical situation: There's a boom in construction of new *air conditioned* apartments going on—in the face of a presumably declining rental market.

Here's one good reason why:

Clean-cool-air apartment suites eagerly are sought and pre-empted by former tenants of older apartments and houses which *lack* air conditioning.

(New construction, of course, usually is air conditioned—hence desirable.)

Obviously lack of air conditioning is a primary reason for the increasing vacancy-rate in older apartments and homes in some of the "better sections" of every major metropolis.

Consequently, owners of out-of-date rental accommodations have been forced to reduce rents in a vain effort to keep their customers.

Otherwise their "bread-and-butter" suites would remain vacant.

Even cut prices don't save them, though.

When rents are reduced and net rental income deteriorates, properties involved automatically decline in value.

Obviously, the worth of all income-producing real estate chiefly is based on the rent it produces.

Equally true in the case of commercial and industrial buildings is this theorem:

Every time tenants move from older structures into *new* air conditioned buildings, or into *existing* structures which recently have been air conditioned, the vacancy ratio in non-air conditioned building increases still more.

Loss of income (and reduced value in resale price) ensues to the owner who has postponed air conditioning.

In the case of a big non-air conditioned commercial property, such as an office building or hotel, these losses are not confined to the owner alone. They also rebound against the harboring city in the form of reduced taxes.

Although a small proportion of new homes built today include air conditioning, virtually all "project groups" (subsidized "row houses") are equipped to accommodate future add-on air conditioning installations economically.

When more and more people become accustomed to air conditioning *and learn to like it*—through personal experiences in apartment houses, "row houses," automobiles, offices, etc.—demand for complete air conditioning of all future "better" homes surely will become irresistible.

Conveniences experienced in apartment houses always are demanded by families which later move into individualized homes. (This is how the electric refrigerator got going.)

Speculators in BIG-BUILDING-TYPE real estate nowadays specify and stipulate air conditioning automatically.

No argument, there.

Therefore, a reasonable observer can conclude that, as more and more cool-comfortable apartment renters, people who work in air conditioned offices, etc., get the message, every alert real estate man will include air conditioning in all his estimates for any building which contains people.

It is becoming a desired "way of life," for good and sufficient reasons.

Mr. Subscriber: make *your* business operation the recognized Air Conditioning Headquarters in your territory *now*.

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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From the Files of the News

25 years ago . . .

Development of a new air conditioning system for automobiles and commercial busses was announced by representatives of Houde Engineering Corp. and Carrier Engineering Corp. at the meeting of the National Association of Bus Operators.

Parts jobbers have been given until Jan. 1, 1936 to join the new National Refrigeration Supplies Wholesalers Association as charter members, H. S. McCloud, president, announced. NRSWA was formed in the NEWS' reception room.

The NEWS editorially approves "premium" selling by refrigerator dealers when (1) it is part of the 1935 Christmas selling campaign promotion, and (2) the "Christmas present" premium is an **accessory** to the refrigerator that is being sold.

Willis H. Carrier, board chairman for Carrier Corp., has announced plans for an extended trip to many tropical countries for the express purpose of promoting the air conditioning market—part of his appeal to help lift the "white man's burden" by improving living and working conditions in the tropics.

Six of the 21 air conditioners sold in Milwaukee during the first 9 months of 1935 were installed in offices, evidence of a trend toward greater acceptance of air conditioning by small businesses. There are now 67 installations of air conditioning equipment in the city.

Offices in Chicago's Morton building that were empty for eight years were immediately leased when management installed complete year 'round air conditioning systems on two floors.

The adaptability of air conditioning to old buildings was shown when problems of (1) designing ducts to provide for shifting of partitions and (2) eliminating odors originating in medical and dental offices were solved in a 10-story Topeka, Kan. building. The latter problem was solved by ample window crackage.

10 years ago . . .

Expected soon is a National Production Authority directive cutting civilian use of copper, aluminum, and nickel by an estimated 15 to 30%—the first major blow at current high rates of production of major appliances and refrigeration equipment.

Department of Commerce has announced additional services for helping smaller business firms obtain government defense contracts without dealing with "five percenters."

Through the newly-created Office of Small Business it will supply guidance and opportunities to participate and, through field offices, make inventories of small firms to find out how they can be of help in the defense effort.

At a NCRSA panel discussion on problems of selling, commercial refrigerator manufacturers asked distributors for full cooperation in solving them, while distributors sought manufacturers' aid in handling large jobs and with store planning.

A step-by-step procedure for replacing fans and motors was described in Part IV of a series on "Servicing the new Philco room air conditioner."

In Cincinnati, Dr. Clarence A. Mills, a recognized authority on climate as related to human beings, threw open his experimental house to reporters. Dr. Mills is field testing the practicability of year-round indoor comfort by controlling body heat loss through radiation only rather than cooling or heating the air surrounding the individual. Called "Reflective Radiant Conditioning," his system provides heating and cooling coils in coves encircling each room about a foot below the ceiling. Walls, ceiling, and floors are covered with heat reflecting surfaces. The NEWS carried a detailed two-part description of the system.

MORE SHOULD SEE COLUMN ON CASTRO

Vienna Homeowner's Service
Vienna, Va.

Editor:

I enjoy thoroughly your publication, especially Mr. Taubeneck's column. His editorial on the embargo of refrigeration parts and supplies to the Castro government was an enlightened piece of a stature one does not expect to find in trade publications. This editorial should be circulated further in the U.S. business community.

H. A. TOWLE

INDIAN SEEKS TRAINING WITH U.S. MANUFACTURER

172 Civil Lines
Unnao, U.P., India

Editor:

Received your letter along with Directory. Permit me to thank you for the copy of your Directory so kindly sent to me and for all your good wishes for me.

But to choose a few major refrigeration manufacturers in your Country, especially those with extensive foreign operations, would be well-nigh impossible for me.

I would, therefore, crave your indulgence and request you either to recommend my name to a few manufacturers of repute who offer the type of on-the-job training I require or send a few names to me to enable me to contact them.

Thanking you once more for all you have so far done for a stranger like me. And hope for an early reply.

O. N. MEHROTRA

AUSSIE OFFERS SLIGHT CORRECTION IN SLANG

Parsons & Robertson Ltd.
Adelaide, South Australia

Editor:

I always make a point of reading each issue of "ACH&R News" when received, and always enjoy your column "Inside Dope." Your World Trade issue contains a very nice compliment to us Aussies, and as one, I thank you for it.

You are certainly quite right when you say that your country can count on Australians as really good friends.

Your article goes on to say that "Australian slang bewilders us," and you mention the song "Waltzing Matilda." I agree with you that "the lyrics are incomprehensible to the uninitiated," as there would be many Australians who would not know the meanings of a number of the slang words used by "Bango" Patterson.

There is one small correction I would like to make in your translater of the words, namely that the word "billy" and "billy can" are one and the same to my understanding. In other words "billy" is a particular kind of cooking utensil, cylindrical in shape with a lid and handle, which is most commonly used for brewing tea.

I use this article of yours as an excuse to drop you a line to extend my regards to you.

J. LANGDON PARSONS,
Managing Director

P.S. You may have heard that 4 months ago, I was elected Federal President of RACCA—I also had a 6-week trip to Japan and Hong Kong.

MORE QUESTIONS ON 3-PHASE MOTOR PROBLEMS

82-30 138th St.
Jamaica, N. Y.

Editor:

Reading with great interest the three phase motor problem in "Readers Comment on Technical Problems" of Oct. 10. Indeed this is a problem, however, in order to eliminate hit and miss theories and to enlighten Mr. Ashley more correctly, many ACH&RN NEWS readers would first like to know:

1—is the open delta three phase transformer bank composed of duplicate single phase units, or a three-phase unit?

2—is the transformer bank used for mixed power and light service?

3—is the transformer bank positively "OPEN DELTA"? because open delta connections are generally used only in emergencies, furthermore the total transformer bank output rating is only approx. 57%.

4—are several transformers connected parallel in the net work?

5—are the transformers reverse connected to obtain different voltage?

6—are the three phase motors of the dual voltage nine leads design?

7—are single phase motors connected in conjunction with 3-phase motors?

Now back to Mr. Ashley's first paragraph "for some time the balance of open delta three-phase banks etc., etc., I presume Mr. Ashley intended to state, the balance of the service line, serving various size motors etc., etc. but needless to say, balancing of transformers is a technical theoretical art and usually is under the jurisdiction of the Utility or P.S.C.

As to the next paragraph "especially in a higher than normal ambient temp. (condenser air discharging or moving air over the motor) if Mr. Ashley feels that this direction of air movement is detrimental or contributing to the problem, he could replace the present fan blades with the pressure type blades, bringing the air first over the motor and then through the condenser.

In regards to the last paragraph "we offered to pay for closing the transformer banks, most likely is a lot more involved than just closing the open delta bank, hence the reluctance or improbability to do so.

CARL BACHMANN

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Thinking of—

- **changing territories**
- **expanding your territory**
- **taking on new lines—**

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CLASSIFIED ADS
Your opportunity may be there.

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The seal is made in such a way that the diameter of the tube does not change, which permits DRYSEAL to be passed through any opening large enough for the tube itself.

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Also you'll find the job-size, 50-foot one-coil pack easy to handle, light weight, economical.

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Hot Jazz Is Cooler with Residential System Installed To Eliminate Noise

By C. Dale Mericle

SAN ANTONIO — When a trombone-playing dentist likes to stage Dixieland jazz "jam" sessions at his home all year around, even during hot Texas summers, and the trumpet player is a sales engineer for an air conditioning distributor, the results are almost inevitable.

So the "playroom" is now air conditioned, and, even more, the system is specially treated to prevent any blower or air movement noise from interfering with the music.

How the noise problem was handled should be of some interest to every contractor engaged in residential air conditioning. While it's unlikely that he'll find many musicians on his list of active prospects, the great popularity of "hi-fi" music systems in homes and the growing awareness that noise not only can be harmful as well as a nuisance and is actually unnecessary will undoubtedly spur greater interest in noise control.

The dentist in question is Dr. Charles Reiley, and as a jazz trombonist he's among the best, as the writer will attest, having "sat in" on a couple sessions with him recently. In fact, Dr. Reiley and the group created quite a stir earlier this year in New Orleans, the home of jazz, when they appeared unheralded at a jazz concert there and virtually broke up the show, according to reviews in New Orleans newspapers.

DIXIELAND jazz "jam" sessions can get pretty hot and likewise the Texas sun, so San Antonio Dentist Dr. Charles Reiley (trombone) asked John G. Martel, Jr. (trumpet, also sales engineer with Carrier distributor) for help in sound-proof air conditioning of his "playroom," which also benefitted Dave Brown (drummer), Jack Skiles (guitar), Oscar Kuehne (piano), and Kenneth Bruhl (clarinet), and privileged jazz buffs.

And Now, to the Air Conditioning System

Trumpeter is John G. Martel, Jr., who makes his living with Kotzebue Distributing Co., Carrier wholesale distributor here.

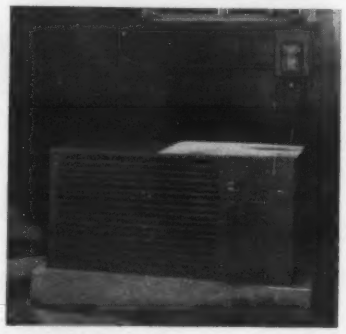
"Running the load was all I did personally," Martel modestly explains.

The actual installation of air conditioning for Dr. Reiley's playroom was made by DuBuisson Co., Carrier dealership here headed up by William DuBuisson.

"My instantaneous load sheet was 29,000 Btuh cooling required at 100°F ambient to maintain 75° and 50% relative humidity inside," outlines Martel. "Outside air required was 300 cfm.

"We estimated 1,450 Btu internal heat gain from each of the eight musicians (a heavy work factor) and 400 Btu for each of the seven others in the room. As you surmised, Dixieland jazz means maximum activity. I can't guesstimate the requirement for the 'cool jazz' school," Martel adds, "as I never played any!"

Equipment selected included a Carrier 2½-ton 38E3 air-cooled remote condensing unit, a 38L30V cooling coil and plenum, and a Carrier 38J75VG-800 gas furnace, the coil section being mounted on top of the furnace.



CARRIER 2½-ton air-cooled condensing unit was installed at some distance from Dr. Reiley's playroom, as was the furnace-coil combination, to minimize noise that might interfere with tape-recording of the "jam" sessions.

Muted

Several things were done in the installation of the equipment to eliminate noise. This was desired by Dr. Reiley not only to prevent interference with the playing music at jam sessions but also because he tape-records the sessions for study and/or posterity. These sessions are just for fun, although, incidentally, the group sometimes plays a commercial "date" in the area.

First, the furnace blower speed was reduced. Normally

Handy Tube Bender

Smoothly Bends any pipe or Tubing ⅜"-1⅛" O. D.

• Just a twist of the wrist assures perfect, even bends — right angle, any angle, U and offset. Save enough on ONE job to pay for your HANDY BENDER.

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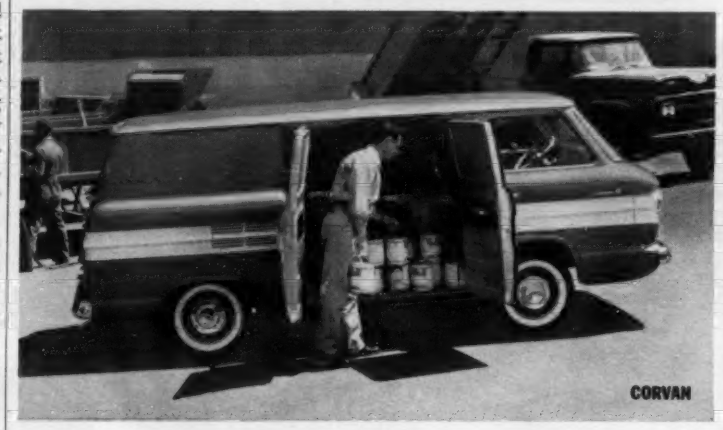

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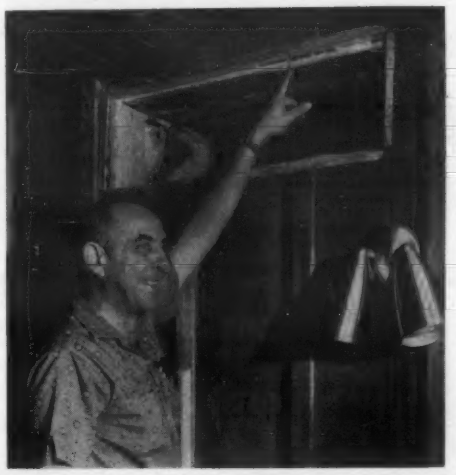
RAMPSIDE PICKUP

the two-speed blower is rated for delivery of 1,200 cfm at .25 in. external static pressure, but DuBuisson, the contractor, slowed it down to 1,000 cfm, completely eliminating the blower sound.

Second, the furnace-coil unit was located farther from the playroom than ordinary requirements would dictate. Instead of being installed in a store-room adjacent to the playroom, it was placed in a utility room another 12 ft from the normal location of the tape-recorder microphone in the playroom.

Not only did the greater distance help in eliminating noise, but this location required a few additional 90° turns in the supply ductwork, each of which helps muffle sound.

Third, DuBuisson lined every inch of the supply ductwork with ½-in. thick Fiberglas acoustical insulation, and a similar amount of acoustical insulation was placed in the return air intake. The ducts are also insulated and vapor-proofed on the outside.



CONTRACTOR William DuBuisson also lined all the supply ducts with ½-in. acoustical insulation as additional insurance against noise interference.

MAIN air supply to the playroom in Dr. Reiley's house comes through these two side-wall registers which are oversized to prevent creation of any "background" noise.

Fourth, supply registers, preceded by turning vanes in the ducts, were sized generously. Two in the playroom are 30 by 10 in. and a third in the adjoining hallway is 14 by 8 in. Supply outlets are in the walls because flat roof of the structure prevented overhead ductwork.

Fifth, return air intake grille is 36 by 12 in. (The return air section had been designed by DuBuisson to permit insertion of sound baffles if they proved necessary, but "fortunately," says Martel, "you can't hear a sound as it is.")

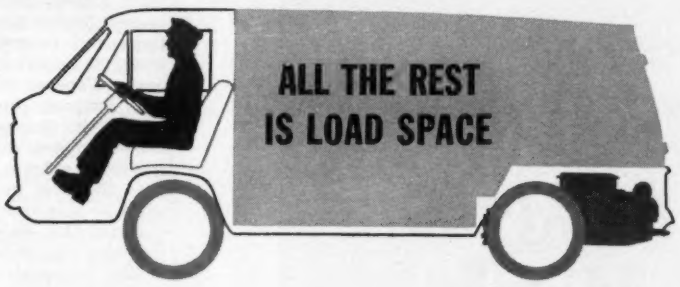
Sixth, outdoor condensing unit section, which is claimed by Martel to be a "silent little baby" anyway, is isolated from the playroom by an outside wall, the utility room, and an interior partition.

A further refinement of the system has been scheduled by Dr. Reiley. A Carrier "air purifier" is to be installed to eliminate odors and smoke, and when that's done, the outside air intake will be dampered off.

While the above installation cost a little more than a strictly conventional system, Dr. Reiley is convinced it was a "sound" investment.

As for air conditioning the rest of the house, would any real jazz fan care?

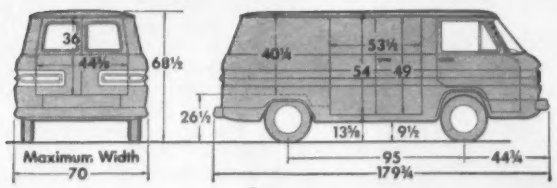
DRIVER'S UP FRONT . . . ENGINE'S IN THE REAR



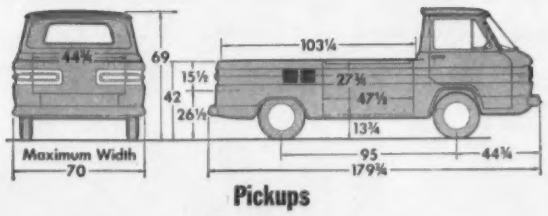
CORVAIR 95 ★★★★★ TRUCKS

withstand slam-bang runs. And there's *4-wheel independent suspension* (first time in a U.S. truck!) to take the roughness out of road surfaces. The list of Corvair 95 design advantages is as long as your arm. There's load space so accessible that the truck practically loads and unloads itself! There's exceptional driver comfort, easy maneuvering, snappy styling, and much, much more. It's a wing-ding of a truck idea—available in pickup and panel body versions. Visit your nearby Chevrolet dealer soon and get all the details. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

★★



Corvan



Pickups

New Corvan. There's a world of load space in this new Chevy panel—it's 109″ long, 60″ wide and 54″ high at center! Side doors take a 4′ x 4′ crate with ease. Left side doors are optional at extra cost.

New Rampside pickup. Roll out those heavy loads—there's nothing to it in this one! Ruggedly built side gate drops down to form convenient ramp for *easy* loading or unloading.

New Loadside pickup. Gives you more load space than a conventional half-tonner. Also, optional extra cost *flat floor* provides 39 sq. ft. of loading area, and you can stow cargo underneath it, too.

Less truck weight allows more cargo weight! Corvair 95's weigh up to 1,200 lbs. less than other half-tonners . . . yet they'll carry up to 1,900 lbs. of cargo!

50-50 weight distribution! Husky 2,500-lb.-capacity front and rear suspensions carry nearly equal loads to reduce strain on chassis and tires.

More load space, less road space! Corvair 95's are 2 feet shorter than conventional half-tonners. But Corvair 95's carry bulkier cargoes!

Easiest to get around in! Turning radius (under 20 feet) is less than that of ordinary trucks. That means easier maneuvering and parking.

1961 CHEVROLET STURDI-BILT TRUCKS CHEVROLET

Custom-Aire Names Edwin G. Weed

SAN FRANCISCO—Edwin G. (Ned) Weed has been named sales manager of Custom-Aire Products here, a division of Pacific Industries, Inc., it was announced by John Baeza, president of the heating equipment company.

E. G. Weed

Weed succeeds G. W. Cheney, who was recently named vice president and general manager.

In his new post, Weed will direct nationwide sales efforts on behalf of the company's forced air furnaces, wall heaters, and combination heating and air conditioning units for residential and commercial construction.

Weed was most recently organizations manager of Aerofin Corp., Syracuse, N. Y.

Mueller-Climatrol Shifts Some Alhambra Operations to Milwaukee

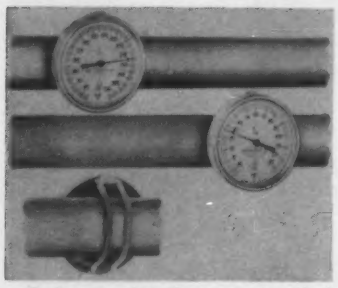
MILWAUKEE — Mueller Climatrol Div. of Worthington Corp. has announced the consolidation of its Alhambra, Calif. engineering, sales, marketing, and accounting departments into the division's Milwaukee headquarters.

The Alhambra operation will continue as a manufacturing and warehousing facility and regional sales branch.

It was also reported that Mueller Climatrol has experienced significant sales gains in its heat pump line and the newly-introduced electric furnace line. Central summer air conditioning sales are 34% ahead of a year ago.

H. P. Mueller, Jr., president of Mueller Climatrol, stated that the consolidation move is being made to further improve customer services.

Thermometer Clips to Pipe with Spiral Spring



● A new pipe thermometer that clips to steam, water, refrigeration, gas, and other pipes by means of twin spiral spring clips supplied with each instrument has been announced by Abrax Instrument Corp., Dept. AH&RN, 179-15 Jamaica Ave., Jamaica 32, N. Y.

"The instruments can be attached or removed from the pipes in seconds and require no alteration of the pipes," the company said. "They can be used for all pipes up to 3½ in. in diameter. The dials are 2½ in. in diameter, silvered, with black figures and polished chrome casings. The thermometers are graduated 2° divisions.

The pipe fitting thermometers come in two temperature ranges: model No. APFT 460 for the range from plus 32° to 320°F and model No. APFT 461 for the ranges of -14° to 134°F. The price of either instrument is $12.95 each.

Density Markings On G-B Duct Coatings

● The coatings on all its duct liners henceforth will carry a factory-applied continuous-imprint that shows density and type of coating at a glance, according to Gustin-Bacon Mfg. Co., Dept. AH&RN, 210 West 10th St., Kansas City, Mo.

On the company's new gray coated duct liner, developed specifically to meet N.B.F.U. regulations, the flame spread classification (less than 25) also will be shown.

Aluminum Integral Horsepower Motor Bows

● Development of a standard integral horsepower motor made of aluminum has been announced by Franklin Electric Co., manufacturer of motors for water pump applications, Dept. AH&RN (161), Bluffton, Ind.

"Most striking feature of the new motor, besides its distinctive exterior design, is its extreme light weight," the company said in listing OEM benefits. "This motor incorporates aluminum alloys in place of the conventional cast-iron construction and achieves weight reductions of up to 30% over cast-iron motors on a rating-for-rating basis."

Another feature of the new motor is the bearing and lubrication system. "The bearings are prepacked and double shielded," it was stated. "Contaminants are positively excluded from the bearing by a special labyrinth seal on the shaft. This seal serves also to keep grease out of the windings. A chamber adjacent to the bearing housing contains an extra reservoir of grease."

Among other features listed are: voltage change is simplified on all dual voltage motors with the built-in quick-connect terminal board; space is provided in the conduit box for protection devices; the motors are available in both single and polyphase.

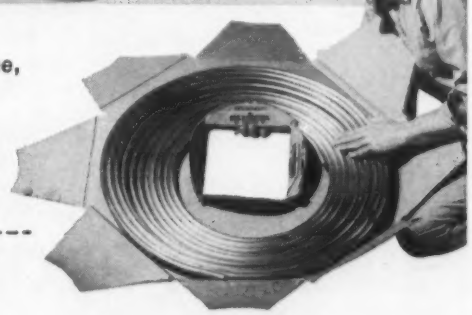
what's so great about

THE NEW LEWIN-MATHES "QUIK-OPENING" CARTON?

IT'S PERFORATED! Simply break perforation.

Opens quick and easy along perforated edges.

No tube-marring knife edges needed. No mess, no fuss, no fumbling with the "QUIK-OPENING" Carton! For trouble-free, time-saving convenience on the job, specify Lewin-Mathes Copper tube in the new perforated "QUIK-OPENING" Carton!

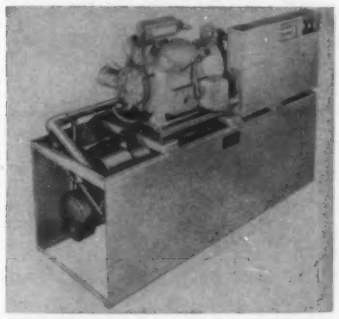


LEWIN (M) MATHES

SAINT LOUIS, MISSOURI

Manufacturers of Copper and Brass Tube and Pipe

Division of Cerro de Pasco Corporation



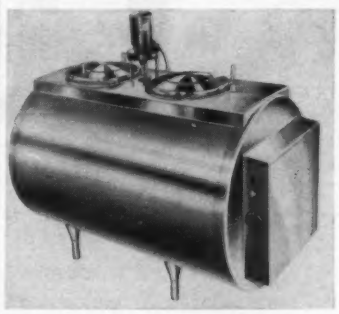
Packaged Liquid Chillers Feature Versatility

● A new line of hermetic packaged liquid chillers for air conditioning or industrial cooling applications is now available from American-Standard Industrial Div., Dept. AH&RN, Detroit 32.

Designated the "Versare" line, the new chillers have been designed with emphasis on versatility, compactness, ease of servicing, and safety, it was stated.

The chillers are available in 11 models for net rated capacities up to 67.1 tons, depending upon condenser water temperature conditions and desired leaving chilled water temperature. The standard design Versare units are also available without condenser and with accessories for use on remote condenser applications. Small capacity increments from model to model give the new line unusual versatility, it was indicated.

Automatic safety switches are provided for motor overload, high motor temperature, low oil pressure, high condenser pressure, or low cooler pressure. The control panel, which is standard on all Versare models, includes an indicator system that facilitates normal operating or trouble-shooting.



Vacuum Type Milk Coolers Introduced

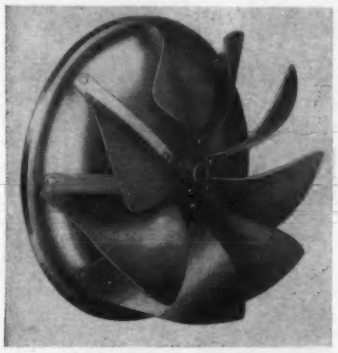
● A new line of vacuum type milk coolers which has been in the field and laboratory experimental stage for almost five years, was introduced recently by Sunset Equipment Co., Dept. AH&RN, P.O. Box 3536, St. Paul 1.

The line consists of 300, 400, and 500-gal models and all units "incorporate most features of Sunset atmospheric coolers which have been in production for many years," it was stated. "For example: all stainless steel material; saddle type construction; positive refrigerant control; direct expansion cooling; controls mounted directly on cooler."

Cleanser, Descaler Now In Plastic Bottle

● "Nu-coil" cleanser and descaler for cooling tower systems, evaporative condensers, and hot water systems is now supplied in non-breakable, rugged plastic bottles at no increase in price, according to Skasol Corp., Dept. AH&RN, Webster Groves 19, Mo.

Aside from the ease of handling, being unbreakable, the plastic bottle eliminates damage from accidental dropping.

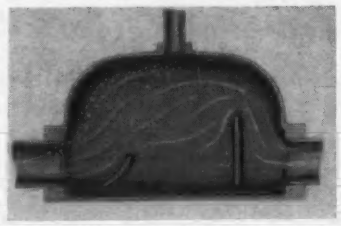


Dynacone Is Cross Between Prop, Wheel

● A new air impeller called "Dynacone" is being offered to the air conditioning and heating trade by Meier Electric, Dept. AH&RN, 3525 East Washington St., Indianapolis 7.

The unit features "air intake—like a prop; air discharge—like a wheel." It is described as a cross between a propeller and a blower wheel with several desirable characteristics from each. Characteristics listed include semi-radial flow pattern providing less turbulence and thus "less noise, substantially more air than a conventional prop of similar size, and less horsepower per cfm."

Other features listed by the company: "If system static increases, Dynacone unloads; Dynacone is a space saver, fits over a wide range of motors; light in weight, simple in construction, yet flat frequency response at operating frequency band levels promises long life; slinger ring an integral part of unit; Dynacone performance not critically dependent on orifice location."



Air Eliminator for Hydronic Systems

● An air eliminator for use in all hydronic systems is being marketed by H. A. Thrush & Co., Dept. AH&RN, Peru, Ind.

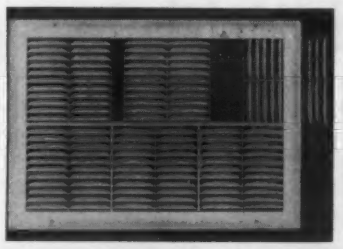
Made in four sizes—¾, 1, 1¼, and 1½ in.—this one-piece cast-iron air eliminator has special cast-in deflectors properly located to direct the air upward to the ½ in. vent connection, the company said. The ½ in. vent can either be carried to a pressure tank or equipped with a #8 Thrush float vent to take care of liberated air.

Modular Return Air Grilles Form Two Sizes

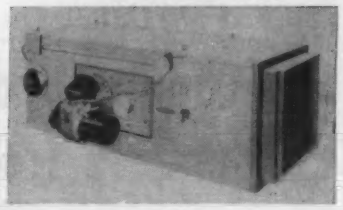
● Rounding out its line of all-nylon registers, grilles, and diffusers, AirGUIDE Plastics Corp., Dept. AH&RN, 20 S.E. Third Ave., Miami 32, Fla., announced the production of new "Convert-it" return air grilles based on a "modular" concept.

"The unbreakable, non-corrosive, non-combustible square module sections are injection molded in one piece with vanes set at 30° angle, allowing total free area of approximately 75% based on core area," it was stated. "In grilles larger than 6 in. square, the modules are mounted in aluminum mullion channels, permitting build-up in 6-in. increments, in sizes up to 36 in. by 24 in. The entire assembly is contained in a specially designed extruded aluminum 'contour' frame assuring rigidity.

"One of the important sales features of the new grille," according to the manufacturer, "is that the wholesaler, in stocking any specific size, can have inventory flexibility of two sizes, in each grille. By simply sliding the modules out of the channels, they may be turned in the opposite direction and re-inserted. For example: A horizontal 24 in. by 18 in. grille can be converted to a vertical 18 in. by 24 in. grille in a few minutes."



More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

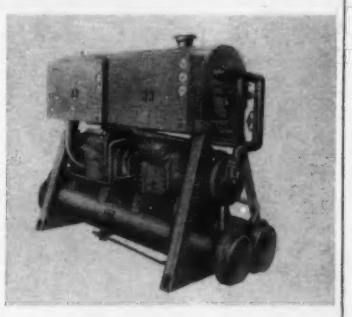


Reversible Flue Outlet On Horizontal Units

● The availability of the latest in its new line of winter air conditioners — the horizontal oil-fired models 95SO and 140SO—has been announced by Bonair Div., Peerless Products Co., Dept. AH&RN, 23rd & Sedgley Sts., Philadelphia.

These units incorporate features such as reversible flue outlet, front or rear, allowing installation in a confined space, it was stated.

Units are 23 in. wide, 24 in. (95-SO) or 27 in. (140SO) deep, and 65½ in. (95SO) or 75 in. (140SO) in length.



Package Chiller Line Ranges 20-100 Tons

● A new line of packaged water chillers for industrial and commercial air conditioning installations has been introduced by the Westinghouse Electric Corp., Air Conditioning Div., Dept. AH&RN, Staunton, Va.

The PKB line includes eight sizes of units in ratings from 20 to 100 tons.

The compressor motors are protected by a "Guardistor" overtemperature control circuit that provides positive motor protection against overheating from any cause: excessively high or low voltage, single phasing, or loss of refrigerant from the compressor, the company said. In addition, quick trip overload heaters are included "for positive six-second kick out on any overload condition, even on cold start," according to Westinghouse.

The larger units, rated at 60, 80, and 100 tons, have twin compressors that provide step starting, demand charge savings during mild seasons, and protection against complete loss of service in event of failure in one system, it was stated.

For process cooling and special commercial installations, 40° leaving water temperature designs are available.

LEECE-NEVILLE
...A NEW
SOURCE
FOR
QUALITY
MOTORS

Announcing a new line of shaded pole and permanent split capacitor motors

Leece-Neville, world's largest independent supplier of fractional hp DC motors for automotive use, announces a complete new line of fractional hp shaded pole and permanent split capacitor motors for use in air conditioning and other blower-type equipment. Basic shaded pole motors range from 1/150 to ¼ hp... permanent split capacitor motors from 1/15 to ½ hp. Our fully staffed engineering department can help you adapt a basic unit or design a special motor.

QUALITY ELECTRICAL EQUIPMENT
Leece-Neville
SINCE 1909

The Leece-Neville Company, Dept. AC-11
Georgia Division, Gainesville, Georgia
Please forward details on your shaded pole and permanent split capacitor motors.
Name_____ Title_____
Company_____
Address_____
City_____ Zone____ State____
Type of Product Manufactured_____

We invite you to compare Leece-Neville quality, ability to deliver, and prices with those of your present suppliers. For details, mail coupon.

Planned for Dulles International Airport

Air Conditioned 'Mobile Lounge' To Take Passengers from Terminal to Aircraft

WASHINGTON, D. C.—The Federal Aviation Agency's new Dulles International Airport is being constructed with passenger comfort and convenience in mind.

For instance, instead of walking, passengers will ride in air conditioned comfort from the terminal building to their airplanes in a waiting room on wheels.

Called a "Mobile Lounge," this unique vehicle will be introduced to the air traveling public at Dulles International Airport when it opens for business in the summer of 1961.

The FAA has ordered three 3-ton air conditioning units, operating on 208 volts, to be installed on the vehicle, which is still in the early stages of construction. A gasoline-powered auxiliary engine will operate a generator to supply the current.

The Mobile Lounge is FAA's answer to the problem most major airports are faced with today—that of the ever-growing distances passengers are required to walk between the terminal building and aircraft.

Will Handle 90 Persons

Up to 90 persons will be transported in comfortable seating in the Mobile Lounge. It will be the largest passenger carrying vehicle ever built to be operated on rubber tires. In size it will be comparable to eight intercity buses arranged with two side by side, two more parked to the rear of these and then four more stacked on top.

The Mobile Lounge will be approximately 54 ft long overall, 15 ft wide, 17½ ft high, and capable of being driven from either end. Passengers will enter or leave the lounges at second floor or lobby level.

Door Will Mate with All Four-Engine Planes

"One end is designed to link with the terminal building utilizing wide entrances to permit passage of two persons abreast," the FAA explained. "The other end is designed to mate with the doors of all four-engine aircraft being used today or in the foreseeable future.

"This mating device will permit an easy transfer of passengers between the lounge and the aircraft at the level of the aircraft doors. At the terminal, the Mobile Lounge will automatically seal itself to the building to minimize noise and outside air from entering the lounge or the terminal.

"Passenger handling is the sole function of the Mobile Lounge. The lounges will be fully air conditioned and heated. Each lounge will be under complete radio control.

"The magnitude of Dulles International Airport and the tremendous air traffic to be handled there in the foreseeable future caused the Federal Aviation Agency to search for new methods of solving the passenger handling problems facing most airport terminals today."

A $750,000 contract for the design and construction of the Mobile Lounge was awarded to the Chrysler Corp., Centerline, Mich., on a cost-plus-fixed fee basis. The Budd Co., Philadelphia, is the subcontractor to Chrysler for body design and construction.

York Starts Second Sound Laboratory

YORK, Pa. — York Div. of Borg-Warner Corp. has announced the start of construction on a second "Sound Laboratory" at its Grantley Rd. plant in York.

The building will be of reinforced concrete, including even the roof. Acoustical insulation and acoustically treated doors are designed to keep all outside noises from the "hush" chamber so that sounds from equipment being tested under actual operating conditions can be accurately measured and analyzed.

The present sound laboratory, put into operation early this year, is designed with "hard" walls so that sound will actually bounce back and forth and be amplified.

Welbilt Names Craig General Sales Manager

FARMINGDALE, N. J.—Appointment of John E. Craig as general sales manager of the Welbilt Air Conditioning & Heating Corp. has been announced by Michael Parcaro, president.

J. E. Craig

Craig will be responsible for all sales, promotion, and advertising activities of the corporation.

Craig joins Welbilt after three years as sales manager for packaged air conditioning products of the air conditioning and heating division of the Crane Co., formerly National-U. S. Radiator Corp., Johnstown, Pa.

Mr. Val Smith, mechanical contractor for E. A. Hinrichs Co., Lincolnwood, Illinois, says:

"On this three-zone air Honeywell went out

Mr. Val A. Smith in the showroom explaining Honeywell Control System to Max J. Palmer, President of E. A. Hinrichs Company, distributors of fine china and silver.

Research, Reserves, and Retailing To Be Main Objectives of Gas Industry

ATLANTIC CITY, N. J.—The gas industry's "determination to apply itself to the fundamental three R's—research, reserves, and retailing," — was cited at the American Gas Association's 42nd annual convention here by Wister H. Ligon, AGA president.

Ligon said research will mean not only development of new gas-burning products for residential, commercial, and industrial users, and improvement of existing products, but also investigation of entirely new concepts involving use of gas.

Average annual expenditures for research by AGA alone will be more than double the $2,000,000 spent in 1959, and such expenditures will be more than matched by member utilities and equipment manufacturers, it was stated.

Stress on reserves will mean expansion of the search for gas supplies and "sizeable extension of today's network of field and gathering, transmission, and distribution pipelines," Ligon said. He pointed out that industry projections through 1969 indicates lines totaling nearly 900,000 miles—a 10-year expansion of 50%.

Ligon explained the industry's "return to retailing" as signalizing more vigorous direct selling and servicing of gas equipment by many gas utilities or a strengthening of utility-dealer-builder cooperation.

Reporting on gas industry research activities, F. W. Batten, vice president of the Columbia Gas System and chairman of AGA's general research planning committee, said that last year the industry commissioned the Battelle Memorial Institute to examine the industry's progress and needs along research lines. Many projects have been initiated since the study to insure introduction of new gas services to homemakers and industrial gas users, he said.

Projects on view at AGA's research exhibit here and demonstrated by Lee Robey, the association's research director, included prototypes or models of a new residential gas air conditioner, new space heaters, a sonic leak detection device, a method of converting heat directly into electricity, a gas-fueled heat pump, and a fuel cell for production of electricity by chemical means.

Festival of Flame Attracts Exhibits

The association's Festival of Flame attracted scores of gas equipment exhibits, including a thermoelectric generator.

Also on display were new types of gas appliance ignition, infrared outdoor heaters, and developments in gas house heating, air conditioning, water heating, refrigeration, and automatic disposal that are now going to market or are soon to be offered to the public.

H. A. Eddins, president of the Oklahoma Natural Gas Co., and chairman of AGA's PAR (Promotion, Advertising, Research) committee, Tulsa, discussed "new frontiers in gas research."

He referred to plans to apply the new technology of transistors to production of perfect ignition for gas equipment. He also cited changes in cooking habits that can develop with the growing use of partially baked, partially cooked, and frozen foods.

"Such foods," he said, "may lead us to tailor appliances that will automatically thaw and complete the cooking operation, possibly by forced convection."

Eddins also indicated plans to develop concealed and multi-duty appliances for space-saving, thermocouples to meet the minor power requirements of gas appliances, a gas-turbine drive of 300 hp, a 50-ton heat pump, and the use of plastics for pipe in gas distribution systems and in house piping.

Gas Appliance Sales Held Up Well Despite Drop In New Housing

Gas appliance sales reportedly have held up well despite a severe drop in new housing starts this year. The reason, delegates to the convention heard, is that there has been a substantial increase in the number of home modernization projects.

"Housing starts for the year thus far are down approximately 13%," said Wendell C. Davis, president of the Gas Appliance Manufacturers Association "For the same period shipments of gas-fired central heating equipment have decreased about 10%, ranges 9%, and water heaters 7%. Meanwhile, the rate of gas equipment installation in home renovation projects is nearing a record."

While final reports for September were not yet available, he said, it now appears likely that shipments of all types of gas central heating equipment (furnaces, boilers, and conversion burners) will top 900,000 units, ranges will total 1,145,000, and water heaters 2,140,000.

Davis also stated that the promotion of quality gas appliances by local utilities can help gas appliance manufacturers return to selling at a reasonable profit. Gas appliance manufacturers themselves must find a means "to cause the consumer to associate quality gas appliances with our quality fuel."

"I believe," he said, "that in the minds of the consumers, the fuel that tells the best heating and air conditioning story is a fuel which will be highly regarded as a fuel for all major appliances. Hence, propaganda will play a major role as competition of the '60s unfolds."

Warren Webster Names Chicago Representative

CAMDEN, N. J.—Andrew F. Ward, marketing vice president of Warren Webster & Co., Inc., has announced the appointment of Maurice H. Hofmeister as sales representative in the Chicago territory.

Hofmeister has been associated with the heating and air conditioning fields in the Chicago area for 13 years.

conditioning system of its way to be helpful"

E. A. Hinrichs Building
Designer and Builder: J. Emil Anderson & Son, Inc.
Mechanical Contractor: V. A. Smith Company

Large job or small, Honeywell is ready and able to handle any control problem.

"During our 51 years experience in the business," says Mr. Smith, "we've found that many times the small air conditioning job presents some of the toughest problems. But the size of the job has never prevented our friends at Honeywell from being 'johnny-on-the-spot' when we needed them.

"On the E. A. Hinrichs job, we were concerned over the fact that the showroom has 50 large spotlights. These spots produce plenty of heat. But the man from Honeywell checked out the situation and made his recommendations; the three-zone electric system has functioned perfectly from the day it went into operation.

"Mr. Palmer, the president of E. A. Hinrichs, is so pleased with the job, that he's ordering some additional work right now. It'll be Honeywell controlled, too. And that's on his recommendation as well as ours."

You get more to work with when you work with Honeywell. Easily installed controls, accurate specifications, prompt delivery and excellent supervision are the advantages enjoyed by every contractor with Honeywell on his team. And, only Honeywell makes all three types of control systems—pneumatic, electric and electronic.

There are 112 conveniently located Honeywell offices across the nation. Call your local one for details. Or, write Honeywell, Dept. AN 11-175, Minneapolis 8, Minnesota.

Mr. Palmer and Mr. Smith inspect one of three Honeywell thermostats that control the temperature system in the E. A. Hinrichs Company.

Honeywell
First in Control
SINCE 1885

Viking Air Catalogs Replacement Blowers

CLEVELAND—An eight-page replacement blowers and parts catalog is now available to the trade from Viking Air Products, 5601 Walworth Ave., Cleveland 2, Ohio.

It was especially written to aid the serviceman in the selection of blowers and parts for heating, ventilating, or air conditioning, the company said.

Dust-Stop Literature, Sales Aids Available

TOLEDO—"Triple volume and profits to match" set the theme of new literature and other sales aids promoting the new Fiberglas Dust-Stop filter "3 Paks" now on the market.

Facts obtained from a consumer study by Owens-Corning Fiberglas Corp. are presented in a sound strip film for distributor or dealer meetings called, "Talk About Sales." Dealers also receive a free sales kit and a brochure entitled, "It's A Triple," which explains how to get a retail promotional program started.

The kits may be obtained from Dust-Stop distributors or by writing to Owens-Corning Fiberglas Corp., Toledo 1.

Other free sales aids explaining the advantages of spare filters in the "3 Pak" are a trim and colorful counter or window display; new banners for windows, walls and doors; ad mats and art sheets.

The manufacturer also has available a self-service display rack called, the "Clean Air Sales Center," priced at $12.50 — a heavy-gauge enameled steel unit which is designed to display 48 Dust-Stops.

Pumping Manual Has Practical Data

LOS ANGELES — Cost of electrical pumping; how to survey a deep well; methods for testing pumps.

These are some of the facts contained in a new 20-page manual, "Useful Pumping and Hydraulic Engineering Data," issued by Peerless Pump—Hydrodynamics Div., Food Machinery & Chemical Corp., 301 West Ave., 26, Los Angeles 31, Calif.

"Written with strong emphasis on practical data for the engineers' everyday use, this manual has many useful charts and problem solving formulae," the company said. For example, there are facts on how to figure NPSH, pump efficiency, mechanical and electrical equivalents, and a pipe friction loss chart."

The manual designated as Bulletin EM-77, is available without charge.

Brochure Describes Water Conditioning

WAUKEGAN, Ill. — How to secure "crystal clear, non-corrosive, non-clogging, non-precipitating" water at low cost for commercial, industrial, and home use is described in a new 24-page brochure released by Stiles-Karlsonite Corp. here.

Titled "Water Conditioning with Karlsonite for Preventive Maintenance," the brochure discusses such common water problems as scale, corrosion, algae, and slime.

"The use of Karlsonite chemicals as effective water conditioners for cooling towers, evaporative condensers, water-cooled equipment, ice cubers, coffee makers, well water supplies, etc., is covered in detail, together with Stiles-Karlsonite automatic dispensers recommended for each application," the company said in describing the brochure.

Water testing instructions, installation procedures, and water data and conversion tables are also included in the new brochure. Copies will be sent, on letterhead request, by writing Stiles-Karlsonite Corp., Waukegan, Ill.

Penn Condensed Catalog Covers Cooling Controls

GOSHEN, Ind.—A new condensed catalog of mechanical cooling and air conditioning controls (Bulletin 1487-AN) has been issued by Penn Controls, Inc. here.

Several new items are listed for the first time. Included is a line of coded control centers for air conditioning. Fan centers, cooling centers, and system centers are cataloged.

Also new is an automatic changeover control for use on heating-cooling fan-coil units. This control, designated the Type 426X, automatically selects the correct thermostat function for proper operation of the equipment.

Penn's all-range water valves, Series 246, are now shown from ⅜ through 1½-in. sizes, according to the company.

American-Standard Covers Packaged Units

DETROIT — A new 12-page, four-color illustrated bulletin (8825) describing American-Standard packaged air conditioners is now available from American - Standard Industrial Div., Detroit 32.

A ready-reference table is provided to give physical data and to indicate the range of capacities available in the American-Standard line of air cooled and water-cooled units.

Henry Describes Over 100 Different Products

MELROSE PARK, Ill. — A new catalog that describes over 100 different types of shut-off, pressure relief and flow check valves, driers, filter-driers, strainers, liquid gauges, flanged unions, liquid indicators, and moisture-liquid indicators has been released by Henry Valve Co., 3215 North Ave. here.

Of particular interest because of its more recent development is the company's new line of "Dri-Vue" moisture-liquid indicators that actually spell out with color variation the words "Wet" and "Dry" to indicate the actual condition of the refrigerant in a system.

Several pages of the catalog are devoted to Henry's "Dri-Cor" filter-driers "featuring a combination of granular desiccant and advanced design molded core to provide two-stage drying and acid removal with progressive filtration. Valuable engineering information for selecting driers will be of interest to refrigeration and air conditioning engineers."

Offers Guide to 'Dual Duct' Air Conditioning

NEW YORK CITY — Details on the practical application of "Dual Duct" air conditioning along with schematic drawings of typical dual duct arrangements are being offered by Buensod-Stacey Corp., in a 16-page bulletin titled "Architects' Guide to Dual Duct Air Conditioning."

The publication, compiled by N. S. Shataloff of Buensod-Stacey, in conjunction with the Technical & Advisory Dept. of Andrew Air Conditioning Ltd., London representative for Buensod, is designated Bulletin DD-7.

Copies of the bulletin are available from Buensod representatives in 50 cities or from the company, 45 West 18th St., New York City 11.

Anaconda Manual Is On Copper Pipe, Tube

WATERBURY, Conn.—Publication of a new, 58-page manual on copper pipe and tube products for plumbing, heating, air conditioning, and refrigeration was announced by Anaconda American Brass Co.

Included is late information, tables, and other data on copper piping of value to builders, designers, piping engineers, industrial purchasing agents, and plumbing contractors.

Copies are available free. Write for Publication B-1, Dept. SBR, Anaconda American Brass Co., Waterbury 20, Conn.

Weather Sensitive Controls Described

WESTERN SPRINGS, Ill.—Weather sensitive controls that govern inside comfort by outdoor temperatures are described in a new line folder (Bulletin G-0260) issued by Automatic Devices Div. of American Machine & Metals, Inc. here.

"Weather - Man," "Weather - Flo," and "Weather-Chron" controls operate with all fuels including electric heat, in steam, hot water, warm air, or radiant panel systems, according to the manufacturer. They are designed for commercial, industrial, and residential comfort control.

The Great Atlantic & Pacific Tea Co. • Jos. Schlitz Brewing Co. St. Luke's Hospital • Tropicana, Inc. • Armour & Co. • Neil House The Fish Meal Co. • Standard Brands, Incorporated • Coca-Cola Co. The Borden Co. • Swift & Co. • Sperry Candy Co. • Union League Club Miller Brewing Co. • Carnation Company • The Kroger Co. Minute Maid Corp. • The Seven-Up Bottling Co. • Wilson & Co., Inc. Sealtest Foods • Anheuser-Busch, Inc. • Foremost Dairies, Inc. Rath Packing Co. • Pepsi-Cola Co. • Marine Bank • Pet Milk Co. Falstaff Brewing Corp. • Norbest Turkey Growers Association, Inc. Merchants Refrigerating Co.

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Vilter equipment finds wide application in all industries where refrigeration and air conditioning are used—from industrial installations in meat packing and poultry plants, dairies, breweries, refrigerated fishing vessels, frozen food plants—to air conditioning systems in important hotels, motels, office buildings and hospitals.

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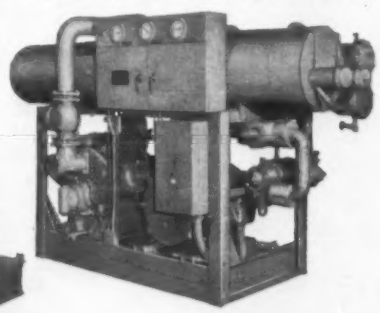

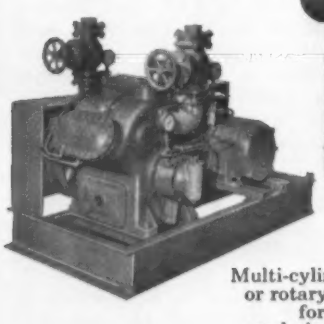

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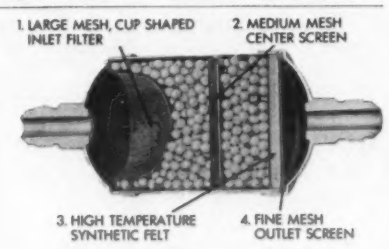
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Retain more moisture because they are filled with pure desiccant - without the binders required for molded block type driers.....retain more dirt and resist plug up because four progressive areas of filtration eliminate "piling up" of dirt and eliminate refrigerant "channeling."

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Universal Match Expects More Glasco Volume, More Air Curtain Profits

NEW YORK CITY — Glasco Corp. sales are expected to rise well over $7 million this year and should go to $9 or $10 million in 1961, John L. Wilson, president of Universal Match Corp., told the New York Society of Security Analysts.

(Glasco stockholders approved the acquisition of their company by Universal Match at a special meeting held in August at Glasco headquarters offices in Muncie, Ind.)

"With the acquisition of Glasco, Universal will be able to compete in every major phase of vending," Wilson declared. "We will have one of the strongest engineering, sales, and service organizations in the entire industry."

He asserted that Glasco's expansion can be accomplished without increasing the size of its Muncie plant. Its food service equipment will be manufactured in Universal's new Conway, Ark. refrigerated cabinet plant, thus providing added production capacity for Glasco vendors at Muncie, he explained.

Wilson told the security analysts that Universal's acquisition of Glasco "not only strengthens our vending operations but it adds an outstanding line of small refrigerated cabinets and other food service equipment for restaurants which complements our present Universal Cabinet line."

Commenting on other phases of the company's activities, he predicted a substantial future for Universal's American Air Curtain subsidiary.

"As a result of added promotion costs and start-up expenses since our acquisition, we do not expect a profit contribution from the Air Curtain in 1960," he said, "but we fully anticipate sizable contributions in the years ahead."

He noted that on Nov. 15 the company will observe the fifth anniversary of the first air curtain door installed in the United States—in a Kroger supermarket near Cincinnati.

"Since then, the Air Curtain has grown in its commercial applications as an entranceway for supermarkets, department stores, and banks. And it has developed even more significant applications in the industrial field," Wilson commented.

"With the Air Curtain, equipment and materials can be moved easily and freely, without the safety hazards and lost motion in using conventional doors, between areas that must have differences in temperature.

"The success of the Air Curtain already has been demonstrated in steel mills, the automotive industry, and various other industrial installations."

Wilson also noted that his National Rejector subsidiary is currently building an air conditioned plant at Hot Springs, Ark. for the manufacture of coin mechanisms for vending machines.

National Rejectors, he announced, has recently scored a "breakthrough" in vending. It has developed a currency identification device and acceptor that will handle $1 and $5 bills and its working on devices to handle $2, $10, and $20 bills.

"We are on the threshold of an entirely new era of push-button buying," he predicted.

'BEV'SERV 100' upright selective vendor dispenses 10 flavors in 100 8-oz bottles and has large pre-cooling capacity, reports La Crosse Cooler Co. Illuminated "7-Up" medallion is said to stimulate sales. A ¼-hp condensing unit powers the self-contained cooling system.

BRAB Makes Report on Refrigerated Storage Installations Available

WASHINGTON, D. C.— Robert M. Dillon, executive director, Building Research Advisory Board, announces the availability of a technical report of the Federal Construction Council, Technical Report No. 38, "Refrigerated Storage Installations."

"A task group composed of engineers from the major government agencies, appointed by the Operating Committee of the Federal Construction Council, has prepared design criteria and selection procedures for "Refrigerated Storage Installations," it was stated by the association.

"The report primarily deals with vapor barriers, insulations, and interior finishes, and their installation.

"The major part of the data, upon which findings are based, were collected in a nationwide inspection and survey of government and private cold storage facilities by a team of engineers appointed by the Federal Construction Council. The results of an analysis of 44 installations in the continental U.S.A. are reported."

This report may be ordered by title and/or NAS-NRC Publication Number (759, Refrigerated Storage Installations), from the Printing and Publishing Office, National Academy of Sciences-National Research Council, 2101 Constitution Ave., Washington 25, D. C.

The price is $2. Discounts are available for quantity orders, according to BRAB.

Coin-Operated Robot Makes Ice, Fills Bag, Delivers It To Customer

CINCINNATI — Exclusive rights to a newly-patented ice vending machine have been acquired by Hilson Industries, Inc. here, it was announced by Irving S. Benjamin, president.

Called the "Hilson Robot," this new machine manufactures its own ice, fills the bags automatically, measures, dispenses, and delivers them to the customer upon insertion of the proper coins.

"Ever since our entry into the ice vending industry, we have recognized the need for a completely automatic unit," said Benjamin.

No human hands will touch the ice, it was pointed out. The only manual operation required will be the placing of empty bags in the mechanism, which will have a holding capacity of approximately 200. Bag capacities, which will range from 5 to 15 lbs can be altered by means of a simple adjustment.

It it anticipated that the "Hilson Robot" will be ready for shipment early next year.

G. E. Hileman, executive vice president of the company, said the Hilson Robot "will be so compact as to be virtually portable."

Walker Sells Patents, Molds for Glass Fiber Refrigerator Door Line to Viroqua Sales

NEW LISBON, Wis.—Robert Walker, president, Walker Stainless Equipment Co., Inc. here, manufacturer of bulk milk pick-up tanks, transport tanks, storage tanks, glass fiber refrigerator doors, and other dairy equipment, has announced the sale of patent rights and mold equipment for the manufacture of the glass fiber refrigerator door line to Viroqua Sales, Inc., Viroqua, Wis.

The transaction was necessary because of Walker's need for additional manufacturing space in its New Lisbon plants to accommodate the increased demand for its glass fiber jacketed pick-up tanks and glass fiber storage tanks.

In a joint statement, Walker and John P. Kline, Viroqua sales manager, emphasized the new Viroqua line will be identical in specifications for all models of the former Walker line. It will be marketed through the same distributors formerly used by Walker.

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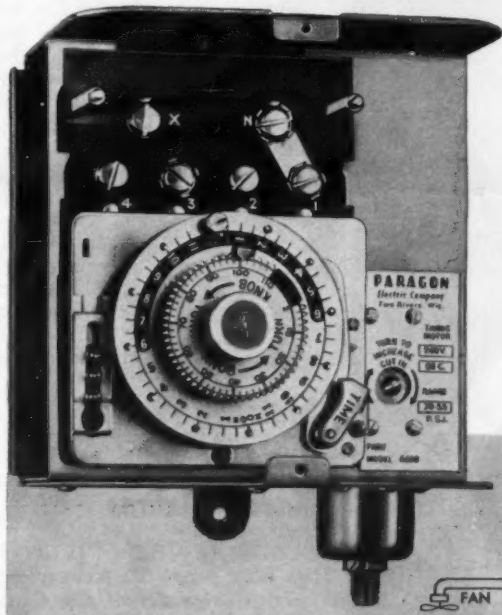

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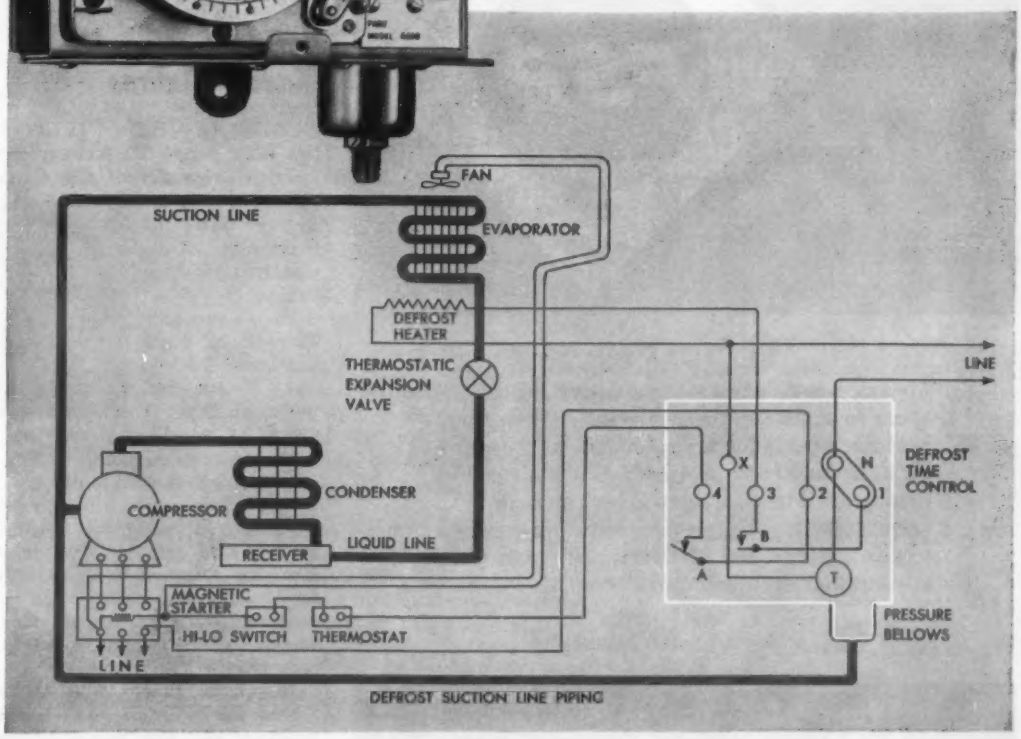

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Market Is Competitive

World Demand for Air Conditioning, Refrigeration Equipment Growing

WASHINGTON, D. C. — The world demand for air conditioning and refrigeration equipment is growing, but the market is competitive.

The Business & Defense Services Administration, U. S. Dept. of Commerce, so reported in a comprehensive study covering more than a score of countries, which is designed as a guide for American firms interested in this trade.

The study was prepared by BDSA's General Industrial Equipment & Components Div., on the basis of Foreign Service dispatches. It is entitled "Air Conditioning and Refrigeration Equipment — Production, Consumption, Trade — Selected Foreign Countries."

The study deals with commercial and non-commercial air conditioning and commercial refrigeration, giving comparative figures for 1956-59 on production, consumption, and trade, and outlining competitive factors, market potential, trade opportunities, import controls and tariffs, and other phases of interest to U. S. industry.

The survey discloses that American manufacturers of this equipment have licensed foreign producers in a number of countries. The multi-million-dollar export business of the industry, it shows, includes a heavy movement of parts for air conditioning and refrigeration units to be assembled in the country of destination, as well as shipments of completed products.

"Venezuela, which does not produce air conditioning or refrigeration equipment, has been the principal U. S. market for several years, with 1959 shipments approximating $13 million," the BDSA stated. "Mexico, in second place, took $4.9 million, and West Germany, whose purchases have been steadily increasing, was third, with about $4 million.

"Other principal markets over $1 million were Italy, Union of South Africa, India, Brazil, France, Colombia, and Pakistan.

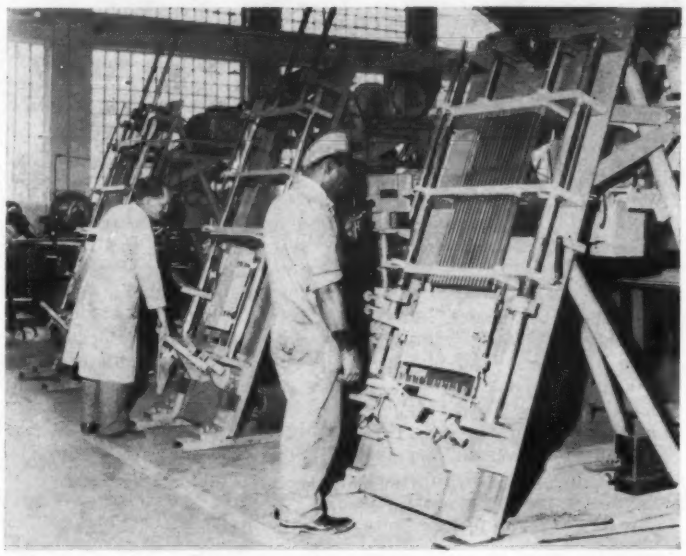
"Other substantial markets include the Netherlands, Belgium-Luxembourg, Belgian Congo, and Ruanda-Urundi, Australia, United Kingdom, Japan, French West Africa, and Guinea.

"India is developing an equipment manufacturing industry and shipments there have been declining. Greatly increased output by the Japanese industry also is reflected in lower shipments of U. S. air conditioning and refrigeration equipment."

The study calls attention to the fact that lists of principal manufacturers, importers, and dealers in air conditioning and refrigeration in many of the countries covered can be obtained for $2 each from the Commercial Intelligence Div., Bureau of Foreign Commerce, U. S. Dept. of Commerce, Washington 25, D. C., or through the nearest department field office.

"Air Conditioning and Refrigeration Equipment — Production, Consumption, Trade — Selected Foreign Countries," is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price, 45 cents. It is also available at field offices.

Coldex Consolidates 5 Plants



CORNER OF PLANT which replaces five previously used by Coldex Industria e Comercio, S.A.

SAO PAULO, Brazil—Coldex Industria e Comercio S.A., manufacturer of domestic and commercial refrigeration components here, has recently consolidated its manufacturing operations into a single plant covering 53,000 sq ft of space, Mario Lantery, industrial director of the firm, reports.

Previously, the company's fast-growing operations were spread over five small scattered buildings connected by UHF radio communications.

New plant is located at Avenida Azevedo 457.

The company makes domestic refrigeration components under the Coldex name and commercial refrigeration components under a separate company called Inparcon.

Coldex makes evaporators and condensers for window air conditioners, aluminum evaporators for domestic refrigerators, wire and fin condensers, driers and filters for domestic refrigerators, ice cube trays, and suction and capillary line assemblies.

This portion of the business takes 40,000 sq ft of space and employs 180 workers.

Inparcon, covering 13,000 sq ft of space with a working staff of 30, turns out air-cooled commercial condensers using locally produced Bundy tubing—a new item—refrigeration driers, refrigeration and large air conditioning coils, and condensing units (except compressor).

Daily production last summer approximated 2,000 driers and filters and ice cube trays, 1,200 condensers for domestic refrigerators, 1,000 suction and capillary line assemblies, and 300 each evaporators and condensers for window air conditioners and aluminum evaporators for domestic refrigerators.

Eight local assemblers of United States brands of refrigerators and air conditioners, among others, buy Coldex and Inparcon products, Lantery said.

He pointed out that the company makes all its own tools and dies, has an aluminum anodizing plant and paint drying oven, and recently installed a small testing laboratory.

Frigidaire Promotes Harry H. Ward as Madden Retires

DAYTON — Harry H. Ward has been promoted from supervisor to manager of the Canadian & Export department of Frigidaire Div., General Motors Corp.

H. H. Ward

He succeeds Emmett N. Madden who retired Oct. 1, completing more than 41 years of service with the corporation.

Ward joined Frigidaire as a sales engineer in the company's Baltimore - Washington branch in 1941. He came to Dayton in 1945 as a member of Frigidaire's air conditioning sales department. Two years later he was promoted to central region commercial sales manager.

In 1951, Ward was transferred back to company headquarters and was named Industrial sales manager. During his tenure of Frigidaire service he also has served as residential sales planning manager, supervisor of residential air conditioning, supervisor of the air conditioning sales program, and supervisor of cooling sales.

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Always use FSP parts for RCA WHIRLPOOL appliances to maintain their original high quality. Manufactured to factory specifications, FSP parts for RCA WHIRLPOOL refrigeration and air conditioning products fit right . . . last long . . . keep customers happy *and* help you make a service profit. Quick delivery, too, from your RCA WHIRLPOOL distributor's complete stock.

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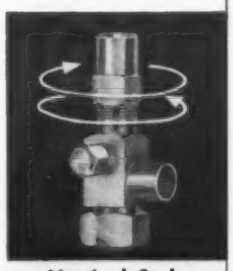

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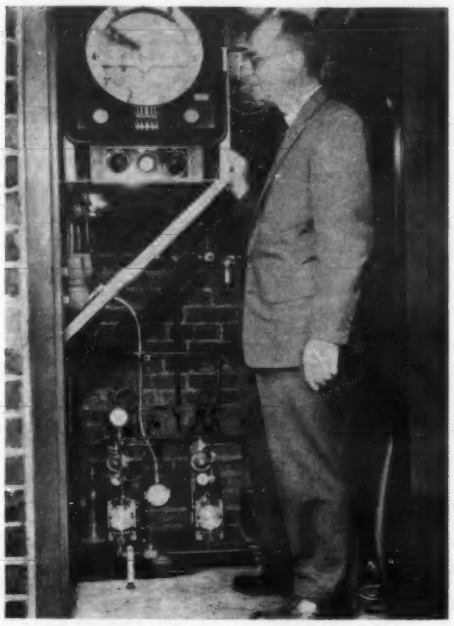

RAYMOND D. KARRER, general foreman of the Timken Co.'s pipe shop, checks the central control system for air conditioning units.

* * *

Textile Industry Using More Large Systems To Assure Quality Production

SYRACUSE, N. Y.—The textile industry has stepped up its installation of large air conditioning systems as a means of obtaining the precise temperature and humidity controls needed for quality production, according to Russell Gray, president of Carrier Air Conditioning Co., a division of Carrier Corp.

He reports his firm sold nearly five times as many systems to textile firms in the first six months of this year as it did in the same period of 1959.

"This is the biggest advance in any of our markets in the last 10 years," says Gray, "and undoubtedly will make 1960 a record year for sales to the textile industry."

Gray cites two major reasons for the sharp rise. The first is the increase in textile plant expansion and modernization to cope with the anticipated business boom of the next decade.

The second is the "Rotaspray Weathermaker," a compact, self-cleaning central air conditioning system developed by Carrier three years ago for use in factories where accurate control of humidity and removal of airborne particles is essential.

Schlegel Air Conditions

CHESTER, S. C.—Construction work is going forward on an air conditioned 55,000-sq. ft. factory building on Highway 9 By-pass to house the Schlegel Mfg. Co. of Rochester, N. Y., a new enterprise for this area.

Heart Attack Kills Bertram M. Natkin

WHITE PLAINS, N. Y.—Bertram M. Natkin, a former national sales manager of industrial air conditioning for General Electric Co., died of a heart attack in White Plains hospital on Oct. 24. He was 50 years old.

Natkin was currently a sales executive for Hotpoint Div. of General Electric in New York City.

He is survived by his widow, Betty, a daughter, Barbara, and a brother, Alfred.

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4. BANOX®—Protects condensers, pumps and water lines against corrosion. Use it at shut down—Spring start-up—after acid cleaning.

5. CALGON CONDENSER CLEANER—Specially formulated for low-cost, safe cleaning of cooling water systems.

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DIVISION OF HAGAN CHEMICALS & CONTROLS, INC.

Central Water Treating System Serves 6 Towers On Timken Factory

CANTON, Ohio — A new method of handling sulphuric acid for the control of acidity and alkalinity of water used in Timken Co. air conditioning systems has been put into effect, according to an announcement by the company.

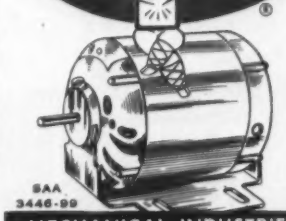
Timken has six water treatment towers in its air conditioning systems that were serviced and tested individually by two men every 24 hours. It was a time consuming operation and required maximum safety equipment for employes since the acid jugs had to be carried by hand to each one of the towers located on the roofs, it was stated.

Installed at Ground Level

Now a centrally located water treatment system has been installed at ground level. All water for these towers is now treated at this one location and pumped to the different towers through plastic pipes. An automatic metering device controls the amount of acid injected into the water.

"This improved method has eliminated the job of carrying acid by hand to roofs and, at the same time, has assured a better water and acid mixture through automotic metering," the company said. "The central systems requires only one pump instead of six and the cost of servicing these towers was greatly reduced."

MIGHTY MITE MOTOR PROTECTORS



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Binks 4-B cooling towers

hot-dipped

galvanized after fabrication for years more service

Now . . . Binks adds extra years of life to an already rugged, dependable cooling tower.

New 4-B series

Now . . . blowers, tower casings, basin . . . all parts subjected to corrosive action, weather and temperature changes are hot-dipped galvanized *after they are fabricated.*

No paint . . . no other coating material offers such long-lasting positive protection. And . . . hot-dipping after fabrication insures that there is no break in this protective armor.

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Season in and season out, Binks towers are always more than a match for the specified cooling load. Motors, whisper-quiet squirrel cage blowers, decking and water dispersal ratios are all properly balanced for top efficiency.

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TECH CENTER

by Frank J. Versagi, Technical Editor

Pressure-Defrosting for Heat Pumps (2)

Earlier this year, Techcenter described a proposed heat pump defrost method submitted by Mechanical Cooling Co., Houston, Texas. In this 2-part article, Ranco, Inc. offers its evaluation of the suggested pressure-defrosting technique.

As we understand this proposed system, it requires separate motors for the indoor and outdoor fans which would make this system not suitable for single motor designs such as window type units. We feel the use of two and three pressure switches will have a distinct cost advantage particularly in smaller size systems.

We further believe it has been assumed by the proponents of the pressure system that (a) the only time defrosting is required, is when the outside coil is below 30°F and the inside coil is below 106°, and further assumed that (b) the heat pump should always go into a defrost cycle when the above conditions exist. In effect then, this system would prevent the heat pump from operating when the conditions in (a) are satisfied.

But, let us consider the following possible example:

Outside ambient temperature	20°F
Outside coil temperature (ice free)	10°F (33 psi)
Inside Return Air Temperature	60°F
Inside Coil temperature	less than 106°F (216 psi)

Thus the system would be reversed (go into a defrost cycle) even though there is no ice on the outside coil and with a relative wide temperature different between the inside coil and the return air temperature. So, false de-icing will occur and could continue to occur and in effect the heating cycle is "lock out." We feel the above hypothetical conditions are entirely feasible in reality.

It has been stated that a third pressure control was added to eliminate false defrosting when both the outside ambient and room ambient were low. This third control opens the inside fan circuit when inside coil pressure drops to 221 psi (108°–R-22).

Predicts Sequence

We believe the following sequence could occur:

1. Outside coil pressure drops to 55 psi (30°–R-22) and switch on outside coil opens, regardless of ice conditions on this coil.

2. Due to icing of the outside coil or due to low outside ambient and/or low inside ambient, the inside coil pressure drops to 221 psi (108°–R-22) and the inside fan is de-energized.

3. When the inside fan is shut off, the pressure in the inside coil will rise.

4. The pressure switch on the inside coil must open to initiate a defrost cycle and this requires the inside coil pressure to drop to 216 psi (106°–R-22). But with the inside fan shut off, the outside coil pressure will increase. One of two conditions will then occur:

(a) The head pressure will increase to 251 psi (117°) and the inside fan will be re-energized. This would cause the inside fan to cycle on and off which would not be desirable. Or,

(b) Even with the inside fan off the head pressure continues to drop to 216 psi (106°–R-22) and a de-ice cycle is initiated. For the inside coil pressure to drop to 216 psi with the inside fan off would require a considerable ice build up on the outside coil.

While we are not saying this pressure system will not work, we do believe satisfactory operation will be confined to a fairly narrow range of conditions. From a great deal of data we have collected from actual field installations covering a good portion of the United States, we know that the heat pump today is subjected to a much wider range of conditions than was normally anticipated and we do feel the pressure system is no over-all answer to the defrosting problem.

Raises Questions

We feel there are several questions that must be raised about the use of this system on low temperature refrigeration applications:

1. Evaporator temperature, and thus pressure, is in many instances a function of user selection and is always operating below ice-formation temperature. Thus, only a termination function is required of the pressure switch sensing outside coil pressure. This control should, except for multiple evaporator units, be responsive to evaporator temperature rather than pressure.

2. Condenser temperature, and pressure, will be greatly affected by ambient temperature and thus the condenser (or head) pressure will vary considerably at time of defrost. A fixed pressure device may not be satisfactory.

While we do not wish to appear entirely negative toward the approach of pressure defrosting, we do feel a lot of testing will have to be done under many conditions before claims can be made and substantiated.

Applied Electrical Theory

The popular 21-week Tech Center series on basic electricity has been reprinted and is available in a 40-page, 8½ by 11 format. Prices: 1-9 copies, 75¢ each; 10-24, 65¢; 25-49, 55¢; 50 or more, 50¢.

'Freon' Names Cooper To Post In East

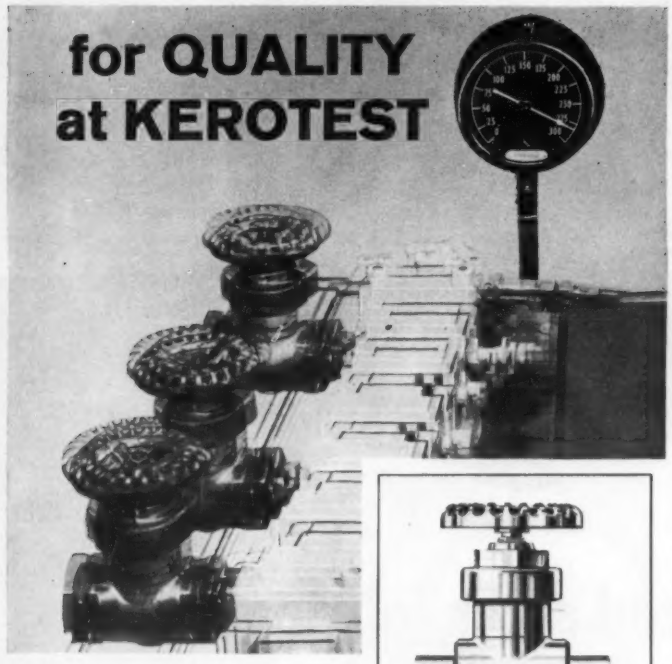
WILMINGTON, Del. — Francis E. Cooper has been appointed sales supervisor of the eastern district office of Du Pont's "Freon" Products Div., the company announced.

To replace him as salesman in the New York territory, Du Pont has named Alfred P. Dougherty, Jr. Dougherty has been a sales correspondent and sales assistant in the eastern district office in New York City since joining the "Freon" Products Div. in 1956.

Cooper succeeds James Gay Gordon, III, who is being given a new assignment in Wilmington as supervisor of aerosol programs.

SHAKEDOWN

for QUALITY at KEROTEST



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Only precision, quality-controlled construction can take this kind of concentrated abuse. These valves, under a pressurized refrigerant, are vibrated at 3600 cycles per minute for prolonged periods. At intervals throughout the accelerated test, Kerotest engineers evaluate performance and condition of seat seals, diaphragm seals, solder seals and handwheels.

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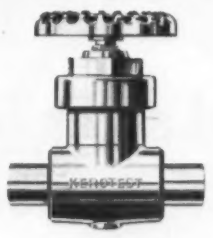

KEROTEST 520 DIAPHRAGM PACKLESS GLOBE VALVE

The precision-built brass valve for all types of refrigeration and air conditioning systems. Ideal for liquefied petroleum gas bulk plants, pipe line loading racks, laboratory installations, nitrogen, oxygen (degreased) and compressed air applications.

Specify the Kerotest 520 globe valve for operating pressures up to 400 psi and temperatures up to 200° F. Use it in vacuum service applications to 1 micron.

KEROTEST QUALITY CONTROLLED FEATURES

- Replaceable spindle seats for continuous positive seating
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First choice of Manufacturers!

A condenser water regulator with a smashing success story! In three short years the Type 56 Condenser Water Regulator has soared to top choice of the industry—top choice of foremost manufacturers of refrigeration equipment, engineers, contractors, service men. Reasons? Just to mention a few:

Wide range—Instantly adjustable to either R-12 or R-22 without changing springs—by simply turning knurled cap. (Setting easily made tamper-proof when desirable.)

Fits in—Small, but plenty of capacity, smoothest modulation, remarkable flow characteristics.

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Chicago—February 13th thru 16th, 1961

YES

To make the most of your time and investment and still have time to enjoy the sidelights of that Chicago trip, make a note right now to pay particular attention to all NEWS' January issues. These issues will be filled with articles and advertisements describing who, what and where about the show.

Knowing what to see and where to go is the key to making such trips pay off. Before you leave for the Exposition make sure you take your big February 13th Show Issue of the NEWS. If you have to leave before it arrives, stop by the NEWS' booth (No. 342) and pick up one of the extra copies we will have on hand for show goers.

NOT GOING

Tied Up . . .

Can't Spare the Time

You're not left out. Next to attending the Show, reading about it in the NEWS' Pre-Show, Show and Post-Show issues is the best possible way to obtain the benefits that such all-industry shows offer. We'll report on all the exhibits, new products, technical meetings, social functions and general color long before any other industry publication . . . and with greater detail too!

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HEATING & REFRIGERATION NEWS
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Reaching these MARKETS
- Air Conditioning
- Heating
- Refrigeration

Serving these FIELDS
- Residential
- Commercial
- Industrial

Richard Heads Field Services for BHC, To Work with Local Groups

NEW YORK CITY—Fred D. Richard has been appointed director of field services of the national Better Heating-Cooling Council, it was announced by Executive Director Franklin Greene.

F. D. Richard

Richard will coordinate the promotion activities of the national BHC with the nine local BHC's now operating in the cities of Baltimore, Chicago, Cleveland, Detroit, Milwaukee, Minneapolis, New York, Philadelphia (Delaware Valley), and Seattle-Tacoma (Puget Sound). He will also be responsible for the development of new local councils.

Richard succeeds Roy A. Bredholt in this assignment. Bredholt recently resigned from BHC to enter the ministry.

Richard joins the BHC after two years with the public relations group of Benton & Bowles, Inc. (General Public Relations, Inc.) where he worked on many accounts.

Richard, 31, is a Phi Beta Kappa graduate of Fordham university, with a Master's degree in English. He is acquainted with the industry since his father was a plumbing and heating contractor.

Warren Webster Names Rep.

CAMDEN, N. J.—Andrew F. Ward, marketing vice president of Warren Webster & Co., Inc., has announced the appointment of Charles P. Austin as sales representative in the Detroit territory.

Cooling Tower Wood Deterioration Covered

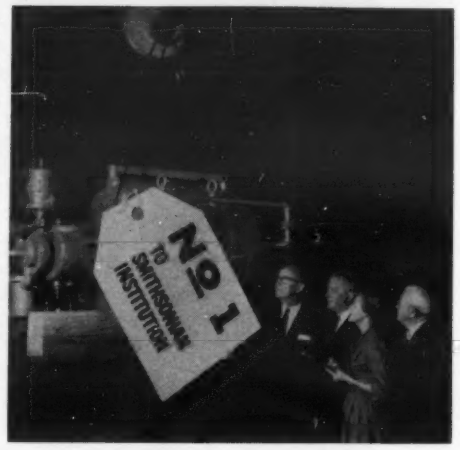
CHICAGO — Causes, symptoms, and suggested cures for deterioration of wood in cooling towers are described in an eight-page reprint (No. 85) prepared by Nalco Chemical Co., 6216 W. 66th Place, Chicago 38.

Keif Joins Staff At Cal. Poly

SAN LUIS OBISPO, Calif.—Rodney G. Keif has joined the Air Conditioning & Refrigeration Engineering faculty at California State Polytechnic college here.

Keif's schedule includes the senior project course in collaboration with Norman Sharpe of the AC&R Engineering faculty. Also, Keif will teach courses in "Orientation," "Plumbing Systems Design," and "Thermal and Fluids Laboratory."

'First Big Cooling System' Goes to Smithsonian Institution



Bearing an oversized shipping tag, the compressor of the "world's first centrifugal refrigerating machine" is hoisted from the loading dock at Carrier Corp. headquarters in Syracuse, N. Y. for shipment to the Smithsonian Institution in Washington, D. C. On hand for the shipping ceremony were: (l. to r.) John F. Kooistra, executive assistant to the general sales manager of Carrier's machinery and systems operation; Russell Gray, president of Carrier Air Conditioning Co.; Rose Marie Stasko, secretary; and Logan L. Lewis, a founder of Carrier.

SYRACUSE, N. Y. — "The world's first big cooling machine for air conditioning use" left here recently, bound for a new career as a star attraction in the Smithsonian Institution in Washington, D. C.

Inside the same N.Y. Central railroad car was the 5,000th big centrifugal refrigerating machine to be built by Carrier Air Conditioning Co.

The 1960 model will help air condition the jet-age terminal building of the Dulles International Airport scheduled to open outside of Washington in 1961.

In between the first and 5,000th units, Carrier produced more than $250 million worth of these machines, according to Russell Gray, president.

"The first centrifugal was developed by the late Dr. Willis Carrier in 1922 and was installed at the Onondaga Pottery china factory in Syracuse," it was pointed out. "After almost 38 years of service, it will form the center of a refrigeration exhibition scheduled to open in a new wing of the Smithsonian next year."

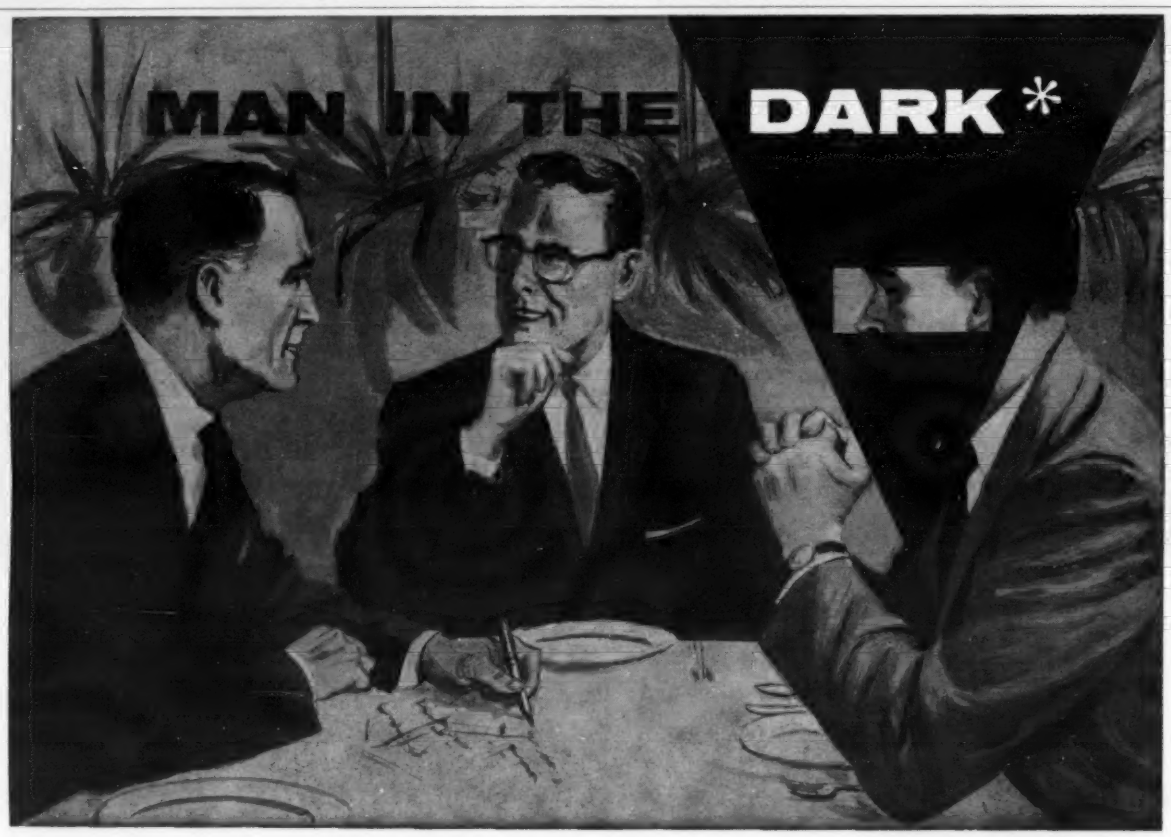
Rheem Appoints R. J. Pierson, Jr.

NEW YORK CITY — Robert J. Pierson, Jr., has been appointed vice president of marketing of the Home Products Group of Rheem Mfg. Co., it was announced by C. V. Coons, executive vice president, at the Rheem corporate headquarters here.

When the Rheem Home Products Group was created this year—combining the Richmond Plumbing Fixtures Div., the Ruud Mfg. Co. subsidiary, and the Rheem Home Products Div.—Pierson became director of marketing for this new group of Rheem operations.

Two newly-appointed division sales managers, reporting to Pierson, will supervise sales of the Home Products Group, according to Vearl J. Heinis, group vice president and general manager.

"For better supervision of sales, particularly with number of product lines being offered by the Home Products Group, we have appointed Robert B. Gilbert western division sales manager and Runo C. Anderson to the same position for the eastern United States," Heinis said.



*"Why wasn't I aware of those facts?"

Be glad that the "man in the dark" isn't one of the industry's more than 22,000 NEWS' subscribers!

Because he isn't informed week-by-week of the changing trends of the complex air conditioning, heating and refrigeration markets, he can't be expected to make the big decisions – the ones that affect your progress.

Now take a look at the brighter side of the picture – at the influential readers of AIR CONDITIONING, HEATING & REFRIGERATION NEWS. They *want* to know about your products and services. Equipment manufacturers, consulting engineers and architects, service and installation contractors, dealers, distributors and field sales-service personnel must be informed to be competitive. That's *one* reason why readers rate the NEWS first in its field. (In fact, many subscribers read *only* the NEWS!)

They rely on the NEWS for news they need about activity in the residential, commercial and industrial fields . . . news that's complete . . . news that carries the urgency only weekly frequency can provide.

Just so you won't be in the dark about which publication is best for *you*, we invite you to take a closer look at the NEWS. Your local Representative has data on reader preference, circulation growth, advertising lineage, editorial content and other important facts. See him soon; you'll be glad you did.

AIR CONDITIONING HEATING & REFRIGERATION NEWS

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You Asked About It

From the many requests for information it receives, the NEWS will select and publish some of general interest. In many instances, the answers will be supplied by authorities in the industry.

Q. Manufacturers of solenoid valves designate them for either ac or dc. What is the difference in the winding? If they are different, why should they be so, but I do know that when used for dc, it is necessary to put a capacitor across the points of the contacts of the switch that opens or closes the circuit to the solenoid, to prevent arcing and high voltage kickbacks from breaking down the insulation in the coil.

J.H.H. — Brazil

A. Our Brazilian reader is answered by **T. Gislason, Sporlan Valve Co.:**

The difference in solenoid coil windings for ac and dc current is quite pronounced. For a given voltage, the power of a solenoid coil depends on the impedance, which in turn is made up of both resistance and inductive reactance.

The resistance is purely a property of the conductor, but inductive reactance is directly proportional to the frequency. The inductive reactance is therefore 0 for dc current, whereas it is usually many times larger than the resistance when the frequency is 50 or 60 cycles per second.

For solenoid coils of comparable operating power, a dc coil would have a much larger number of turns, of finer wire, than the ac coil for the same voltage. By the same token, a given solenoid coil would be rated for much higher voltage on dc current than on ac current.

This does not imply, that all solenoid valves could be used on either ac or dc, provided that the voltage be appropriate. It depends on the type of magnetic structure whether such interchange of ac and dc usage is practical.

Regarding the comment about capacitor protectors on dc solenoid coils, we would like to add, that they are particularly called for when the contacts have limited current capacity or when the dc voltage is high. Capacitor protection is generally not considered necessary, unless the dc voltage is 110 volts or higher.

Pocket-Size 'Air Duct Calculator' Has Only Single Slide for Simplicity

KALAMAZOO, Mich.—A new pocket-size "Air Duct Calculator" having but a single slide is announced by the Paul S. Morton Engineering Service, 5131 Meadowlark Lane, Kalamazoo.

With the calculator, "duct sizing by the equal-friction or velocity-reduction method, as well as estimating metal and insulation requirements is really simplified," it was stated. "Any or all of the following data may be quickly read with but a single setting of the slide:

"Friction per 100 ft. of duct; cfm; velocity-fpm; round duct diameter in inches, and rectangular equivalent in inches; weights per lineal foot of round duct in pounds for the various gauges of galvanized and aluminum duct; surface area in square feet per lineal foot of round duct.

"Also, by setting 'the width plus the depth' of rectangular duct at an arrow, the weight in pounds per lineal foot will be found opposite the various gauges of galvanized and aluminum duct, as well as the surface area in sq ft plus per lineal foot.

"It will be found useful for coverting round duct sizes to rectangular, or rectangular to round.

"The surface area data (square feet per lineal foot of rectangular or round duct) will be helpful in determining insulation requirements.

"On the back of the calculator is tabulated useful data abstracted by permission from the 1959 Heating, Ventilating, Air Conditioning Guide."

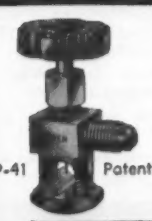
The actual size of the calculator is 4 in. by 8½ in. and it retails at $2.50.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

MADDEN *Preferred by* SERVICEMEN EVERYWHERE

MADDEN
Tube Piercing Valves

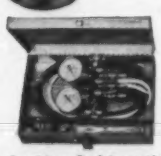
1 Valve for 4 Tube Sizes—3/16", 1/4", 5/16", and 3/8".



HP-41 Patented

HP-41A Patented

New Tamper-proof style has Allen wrench head.



CHARGING AND TESTING UNIT IN METAL BOX includes gauges, manifold bar, hand wheels, hanging hook, hose holder, and one set of Madden color coded charging lines.

Write for New Refrigeration and Air Conditioning Catalog No. R460.

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Danville Names 4 New Sales Representatives

DANVILLE, Ill. — Appointment of four new sales representatives has been announced by the Danville Div. of Bohn Aluminum & Brass Corp.

Keatts Thermal Equipment Co., Columbus, Ohio, has been named representative for Bohn heating and cooling coils.

This appointee will call on wholesalers and manufacturers in the Greater Columbus area as well as all of the counties in the area bounded on the east and west by the Ohio state lines; on the north by and including the countries of Darke, Shelby, Logan, Union, Marion, Morrow, Knox, Holmes, Tuscarawas, Carroll, and Jefferson; and on the south by, but not including, the counties of Butler, Warren, Clinton, Highland, and Scioto.

(Bohn representative in the same area for commercial refrigeration products and unitary coils is Hugo C. Smith of Brecksville, Ohio.)

Thomas Engineering Co. of Tulsa, Okla., also has been named sales representative for Bohn heating and cooling coils. The firm will cover Oklahoma plus the counties of Benton, Washington, Crawford, and Sebastian in northwestern Arkansas.

(Philip T. Miner of Dallas is Bohn representative in the same area for commercial refrigeration products and unitary coils.)

Third new representative for Bohn heating and cooling coils is R. E. Overman Co., Memphis.

The appointee will call on wholesalers and manufacturers in Tennessee west of and including the counties of Henry, Benton, Decatur, and Hardin; in Arkansas, east of and including the counties of Clay, Greene, Craighead, Jackson, White, Faulkner, Perry, Garland, Hot Spring, Clark, Ouochita, and Union; and in Mississippi, north of and including the counties of Washington, Sunflower, Leflore, Carroll, Montgomery, Choctaw, Oktibbeha, and Lowndes.

(Bohn representative in the same territory for commercial refrigeration products and unitary coils is R. H. Simmons of Memphis.)

George J. Xavier, Toronto, Can., has been appointed sales representative for the complete Bohn line of commercial refrigeration products and unitary coils as well as heating and cooling coils. His territory includes the provinces of Ontario, Quebec, and Manitoba.

Greater Miami Service Now In Larger Quarters

MIAMI BEACH, Fla.—Greater Miami Refrigeration Service, Inc., formerly at 731 5th St. here, has recently moved to new, larger quarters at 908 71st St.

The firm, owned by Mr. & Mrs. Ed Lewis, sells and installs Fedders and Trane air conditioning equipment.

Wolverine Opens Birmingham Depot

ALLEN PARK, Mich.—Wolverine Tube, division of Calumet & Hecla, Inc., has opened its new sales office and mill depot in Birmingham, Ala.

J. P. Howland, sales manager for the Birmingham district, commented that the new facilities are constructed with maximum provision for handling complete stocks.

The mill depot will speed shipments to wholesalers of copper water tube, refrigeration service tube, automotive tube, and aluminum "Versatube," the all-purpose tube. Two loading docks and modern material handling equipment have been provided.

The district sales office has been centrally located at 3607 1st Ave., S., in Birmingham to service Tennessee, North and South Carolina, Georgia, Florida, Alabama, Mississippi, and eastern Arkansas. The mailing address will be: P.O. Box 1590, Birmingham 1, Ala.

Toledo Firm Appoints Charles B. Claspill, Jr.

TOLEDO — Allied Industrial Service Corp. announces the appointment of Charles B. Claspill, Jr., as sales engineer. Claspill is a registered professional engineer, with eight years of industrial design and 12 years of industrial sales experience.

Robert Greenwald, president, states that with Claspill's appointment the company will expand its services in the fields of heating and industrial piping. In the past the company has been in air conditioning, refrigeration, and ventilation.

MINIMUM INVENTORY—GENEROUS PROFITS
Service Air Conditioning Controls with Identical Parts Used in Original Equipment

Only 20 starting relay kits will replace 355 various items.

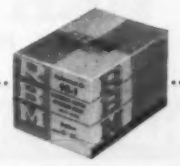
Only 19 control relay kits will replace 142 various relays, contactors, controllers.

Same-day-shipment on parts ordered from RBM Chicago warehouse.

NOW! GENUINE

RBM REPLACEMENT KITS

For the first time, RBM offers kits for direct replacement of the magnetic controls it has engineered and built as original equipment for all major air conditioning manufacturers. Their requirements have been consolidated into a few replacement kits. This, plus same-day-shipment of orders from the Chicago warehouse stocks, keeps your inventory down. Because RBM original equipment and replacement controls are manufactured on high volume production lines, costs are low . . . and you benefit from the saving in generous profit margins.



Wholesalers . . . be ready to service your dealers. Order your RBM replacement kits today from our Chicago Warehouse, 3501 W. Addison, Chicago 18, Illinois.

For technical information write or phone:

RBM Controls Division
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Effect of Small Amounts of Air In Refrigeration System

By J. E. Hoffman, Sporlan Valve Co.

Analysis of the sludge removed by filter-driers returned from the field has shown that organic sludge, presumably from oil breakdown, is the most predominant form of contaminant in a refrigeration system.

Since previous tests have shown that this sludge is chiefly an oxidation product, it was decided to run tests in sealed glass tubes to determine the effect of small amounts of air under controlled laboratory conditions. Using the accepted sealed tube procedure followed by others in the field, tests were conducted for as as long as six months.

In order to simulate the temperature conditions which are present in an actual system under heavy duty operation, the tests with R-12 were run at 250°F and the tests with R-22 at 300°F.

Results

Figs. 1 and 2 show the resulting refrigerant decomposition and change in oil color for Refrigerant-22. This data shows that even when the tubes were evacuated to only 28 in. of vacuum there was no measurable refrigerant decomposition and no significant change in oil color when compared to tubes that were evacuated to 10 microns absolute pressure.

Figs. 3 and 4 show the resulting refrigerant decomposition and change in oil color for tests run with Refrigerant-12. The sample tubes that were evacuated to only 28 in. of mercury showed a large amount of refrigerant decomposition and the oil rapidly turned to a brown and then a black color. Intermediate samples were run which were evacuated to .5 mm. Hg and 2.5 mm. Hg absolute pressure. These samples had slightly more refrigerant decomposition and a slightly darker color than the control sample that was evacuated to 0.1 mm. Hg (10 microns). Apparently Refrigerant-12 is less stable in the presence of air.

Inspection of filter-driers returned from the field tends to confirm the above results. The amount of organic sludge is greater in driers returned from Refrigerant-12 systems and on many occasions the amount of sludge from the system is considerable. In some cases the filter-drier core was coated 1/16 in. or more. One of these sludges which occurred in large quantity was analyzed by Du Pont's Freon Products Laboratory and found to contain appreciable quantities of oxygen bearing organic compounds (carbonyl groups and carboxylic acids).

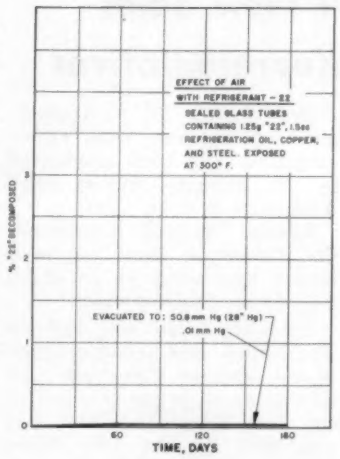

FIGURE 1

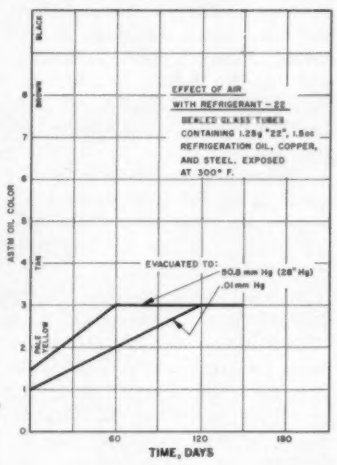

FIGURE 2

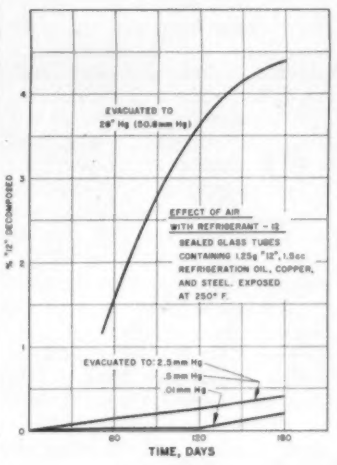

FIGURE 3

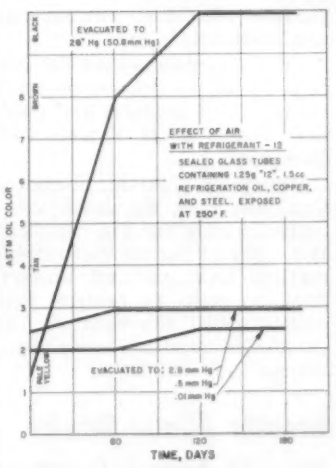

FIGURE 4

Presence of Organic Acids Cited

Another factor indicating that oxidation takes place is the presence of organic acids in the oil. The amount of organic versus inorganic acids can be determined by a simple modification in the usual method of analysis. Oil samples from the field analyzed in this way frequently show appreciable quantities of organic acids. This same method has been used on sludge samples by first dissolving them in a solvent. Certain sludge samples have contained 10 to 20% organic acid.

All these tests demonstrate the adverse effect of air within the refrigeration system. They indicate that the system must be evacuated to an absolute pressure in the range of 2 mm. Hg for Refrigerant-12. While the data for Refrigerant-22 does not show that this refrigerant is as sensitive to small amount of air as is Refrigerant-12, it is nevertheless recommended that refrigerant-22 systems be handled in the same way Refrigerant-12 systems.

When it is considered that a sizable pressure drop occurs in vacuum lines and the internal restrictions in a system, it is essential that the system be evacuated to a "vacuum reading" of less than 2 mm. Hg. To provide a satisfactory factor of safety it is recommended that systems in the field be evacuated to 0.3 mm. Hg (300 microns) or less. This particular level is already recommended for field evacuation by at least one large refrigeration equipment manufacturer.

To obtain this high degree of vacuum necessary to assure trouble-free operation, the use of a good vacuum pump is essention. In addition, a double or triple evacuation procedure should be used.

G-E Names Gorski to Controls Dept. Post

MORRISON, Ill.—Stanley A. Gorski has been named manager of marketing at General Electric's Appliance Control Dept. here, according to Joseph H. Gauss, department general manager.

Formerly manager of timer sales, Gorski succeeds Donald J. Harrington who has been appointed manager of marketing at the company's Capacitor Dept., Hudson Falls, N. Y.

Following his appointment, Gorski announced that Lawrence H. Van Wassenhove has been named advertising and sales promotion specialist for the Appliance Control Dept.

Van Wassenhove is responsible for coordinating all advertising and sales promotion activities for the department's appliance, air conditioner, and furnace controls. He has been a designer in the Appliance Control Dept.'s engineering section.

Boyle Gets Frick Procurement Post

WAYNESBORO, Pa. — Appointment of John E. Boyle as director of procurement for Frick Co. has been announced by Matthew W. Gouger, executive vice president.

John E. Boyle

Boyle has served in numerous business management administrative capacities including director of corporate development for the America Corp., and director of business planning for the Brown Instrument Div., Minneapolis-Honeywell Regulator Co. He has been associated with the Frick organization for the past six months, engaged in special assignments.

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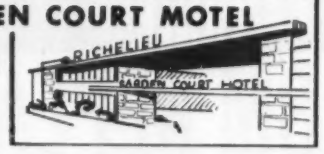

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Knoxville Sales--

How Knoxville Contractors Fared In 1960

Contractor	RESIDENTIAL Cooling 1960 Total	Cooling –New Homes– Bldr.	Cooling –New Homes– Buyer	Cooling Exist.	Heating Heat Pump	Heating Warm Air	Heating Hyd.	Heating Elect. Res.	COMMERCIAL Cool.	COMMERCIAL Heat Pump	COMMERCIAL Htg.
1	61*	23	21	17	53*	14	..	1	29	10	22
2	28	11	9	8	24	3	..	2	25*	8	11*
3	25*	1	10	14	..	60	..	5	12*	..	13*
4	15†	..	5	10	6	13	..	..	26	7	32*
5	10†	3	7	..	5	7	..	..	5	1	10
6	8	..	2	6	7	12†	2	..	10	4	6
7	7†	5	1	1	6	1	..	..	12†	3	6
8	5	..	2	3	..	5	5	..	3	..	10
9	3	..	..	3	..	10	..	..	..	..	..
Distributor											
A	320*	160	128	32	300*	..	..	..	..	..	..
B	63	NA	NA	NA	22*	94	2	28	28	3	26
Total	545	203	185	94	423	219	9	36	150	36	136

Contractor	Percentage of Dollar Volume –Residential– Cool.	–Residential– Htg.	–Commercial– Cool.	–Commercial– Htg.	Other
1	60%	10%	20%	5%	5%
2	35%	5%	15%	5%	40%
3	NA	NA	NA	NA	NA
4	10%	5%	30%	25%	30%
5	—— 10% ——		—— 20% ——		70%
6	18%	29%	39%	14%	....
7	—— 5% ——		—— 16% ——		79%
8	5%	10%	10%	15%	60%
9	2%	5%	....	....	93%
Distributor					
A	NA	NA	NA	NA	NA
B	NA	NA	NA	NA	NA
Total	....	....	....	....	....

***Up from 1959. †Down from 1959. Heat pumps (which total 423 residential and 36 commercial applications) are included in both cooling and heating catagories as well as being listed separately.**

(Continued from Page 1, Col. 3)

substantially the same this year as last year.

Big gain was in heat pumps. The 423 residential jobs represent a gain of 133 over the 290 noted in the 1959 survey whereas the over-all gain in residential air conditioning was 98 installations compared with 1959.

(In both the residential and commercial listings in the accompanying table heat pumps are included in the totals under both cooling and heating, in addition to being listed separately, since the same unit performs both functions.)

Systems for New Home Buyers Hit 185

Of the 545 residential air conditioning installations made in Knoxville this year, 203 were installed for speculative builders, 185 for the buyers of new homes, and 94 went into existing homes. (Distributor B could not provide such a breakdown on the 63 units he had sold to independent contractors.)

In 1959 the rundown was 263 for speculative builders, 41 for buyers of new homes, and 80 for existing homes.

The big difference between the two years, of course, is the greatly increased number of buyers of new homes who exercised their option to get air conditioning. There was a substantial change, also, in purchases by speculative builders.

Heat Pump Use High Because of TVA Rates

The preponderance of heat pumps in residential air conditioning in this area is not surprising. While the climate does make for a reasonably good balance between summer cooling and winter heating requirements, chief advantage for the heat pump is undoubtedly the very low power rate available from TVA.

The latter has also contributed greatly to the dominance of electric resistance heat in the area.

This means that the figures for residential heating given in the accompanying table may not be truly representative. These show that in addition to 423 heat pumps, these contractors and distributors supplied 218 warm air systems fired by gas or oil, nine hydronics systems, and 36 electric resistance systems.

Electrical Contractors Not Surveyed

It is quite likely, however, that a considerably greater number than 36 electric resistance heating systems were installed, but by electrical contractors who were not approached in this survey because it is concerned primarily with residential air conditioning.

The Knoxville contractors and distributors were also questioned about their activities in commercial air conditioning and heating, chiefly to determine what degree of specialization, if any, in residential might be disclosed.

Only Contractor No. 1 and Distributor A indicated that residential cooling and heating accounted for most of their activities in this field.

It will be noted that the firms listed had a total of 150 commercial air conditioning installations and 136 commercial heating jobs, with 36 heat pumps being included in these installations.

These figures probably provide a pretty fair indication of how commercial air conditioning went in Knoxville during 1960, and they may be indicative of commercial heating as well.

They represent substantial gains over 1959, when the same firms noted 125 commercial air conditioning jobs and 91 commercial heating systems installed.

Commercial Heating Systems

Of the commercial heating systems, in addition to the 36 heat pumps, there were 64 involving forced warm air with gas or oil as the fuel, 26 hydronics systems, and 10 straight resistance heating jobs.

No absorption air conditioning systems were noted in either commercial or residential appli-

(Continued on Back Page, Col. 1)

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Dayton Rubber Co.
Delco Products Div.
Detroit Controls Division
Duro Metal Products Company
Erie Tool Works
Felt Products Company
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Linde Company
McIntire Company
J. P. Marsh Company
Maurey Manufacturing Corp.
Millers-Falls Company
Minneapolis-Honeywell Co.
Mirro Aluminum Company
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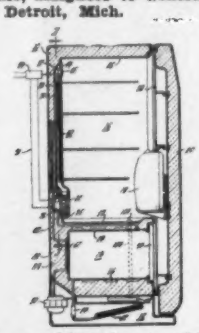
PATENTS

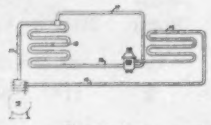
Week of July 12 (Concluded)

2,944,410. REFRIGERATING APPARATUS. Leonard J. Mann., John M. Murphy, and Clifford H. Wurtz, Dayton, Ohio, assignors to General Motors Corp., Detroit, Mich.



2. In a refrigerator, a cabinet having a first compartment for storage of frozen foods and a second compartment for the storage of unfrozen foods, a first evaporator arranged in thermal exchange relationship with said first compartment, a second evaporator for cooling said second compartment, a compressor, a condenser, refrigerant flow means connecting said evaporators, compressor, and condenser in series flow relationship. . . .

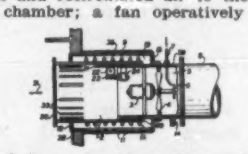
2,944,411. REFRIGERATION SYSTEM CONTROL. William L. McGrath, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



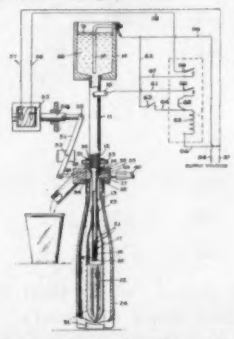
1. In a refrigeration system the combination comprising an evaporator, a compressor, a condenser and an expansion member interconnected to form a closed circuit for the flow of a refrigerant, said expansion member including a first inlet for permitting flow of liquid refrigerant to the evaporator and a second inlet permitting flow of substantially gaseous refrigerant from the high pressure side of the refrigeration system to the evaporator, and means responsive to evaporator pressure corresponding to predetermined evaporator temperature for controlling the effective area of each opening. . . .

2,944,623. AIR CONDITIONING APPARATUS. Karl Sauter, Uitikom am Albis, Switzerland, assignor to Luwa Ltd., Zurich, Switzerland.

1. In an air conditioning apparatus comprising: a movable case encompassing a mixing chamber; said case having an inlet orifice selectively in communication with a source of fresh air and/or a source of recirculated air for the admission of either or both fresh and recirculated air to the mixing chamber; a fan operatively positioned in conjunction with said mixing chamber to cause flow of an air stream thereinto; a relatively fixed housing surrounding said movable case. . . .



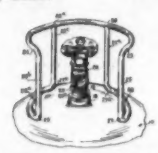
2,944,703. CARBONATED BEVERAGE DISPENSER. Jack M. Womack, Chattanooga, Tenn., assignor to Cavalier Corp., Chattanooga, Tenn.



1. In apparatus for dispensing premix carbonated beverages, a chamber holding the beverage to be dispensed, a valve body, a bore in said body having a portion of larger diameter and a communicating portion of reduced diameter, said portion of larger diameter being in communication with said chamber, a discharge port opening into said portion of smaller diameter, a unitary valve member mounted for reciprocation in said bore comprising a piston element having a fluid tight fit in said portion of reduced diameter and a piston element having a fluid tight fit in said portion of larger diameter, means for reciprocating said piston elements in said bore in unison, said piston elements being so constructed and arranged that both portions of said bore are closed for a predetermined distance of travel of said valve member after one of said portions is closed and before the other of said portions is opened, and means for placing said portion of larger diameter in communication with a source of pre-mix carbonated beverage under pressure. . . .

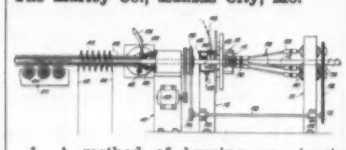
Week of July 19

2,945,294. METHOD OF MAKING GUARD RINGS FOR GAS CYLINDERS. Louis B. Courtot, Euclid, and George E. Tanker, South Euclid, Ohio, assignors to The Weatherhead Co., Cleveland, Ohio.



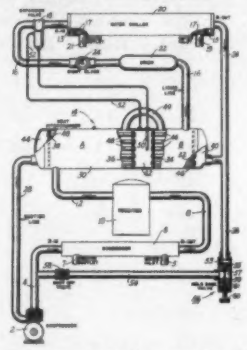
1. That method of making a tank valve guard ring which comprises cutting a length of rod stock, curving the mid-portion of said rod stock to provide a circular horizontal portion enclosing a valve on a tank for about 270° and bending the end portions of the stock at right angles to said mid-portion and thence generally parallel to the circular mid-portions of the ring and conforming to a tank surface and thence upwardly from the tank and welding the extreme end portions of the rod stock to the circular mid-portions to provide a circular mid-portion spaced from the tank by four spaced legs and thereafter welding the lower extremity of each leg to the tank. . . .

2,945,296. METHOD OF AFFIXING FINS TO TUBING. Dougan L. Jones, Lees Summit, and Cornelius Langewis, Hickman Mills, Mo., assignors to The Marley Co., Kansas City, Mo.



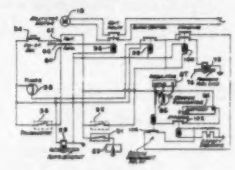
1. A method of brazing an aluminum fin to a tube having an outer surface of copper, said method including the steps of initially placing a substantially fluid coating on said outer surface of copper, said method including the steps of initially placing a substantially fluid coating on said outer surface of the tube and including by weight, 10% to 20% of zinc oxide, 50% to 70% of zinc chloride, 2% to 5% of ammonium chloride, 1% to 3% of sodium fluoride and 15% to 20% of water; applying the fin to the tube with the inner edge surface thereof in close abutting relationship to said outer surface of the tube; heating the finned tubing to a brazing temperature within the range of 750° F. to 850° F. . . .

2,945,355. CAPACITY CONTROL OF REFRIGERATION SYSTEM. Cecil Boling, West Hartford, Conn., assignor to Heat-X, Inc., Brewster, N. Y.



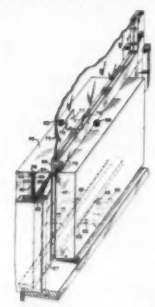
1. In a refrigeration system having a compressor, a condenser, an expansion valve and an evaporator interconnected for the flow of refrigerant in a refrigeration cycle, the combination with said system of a heat interchange unit having a liquid path along which liquid refrigerant flows from the condenser to the evaporator in heat interchange with a gas and vapor refrigerant path along which refrigerant flows from the evaporator to the compressor, said heat interchange unit having an intermediate sensing zone through which refrigerant flows from the evaporator and which is not in heat-exchange relationship with the liquid refrigerant flowing to the evaporator. . . .

2,945,356. REFRIGERATED MILK STORAGE TANK. Melvin P. Schultz, Paul L. Luxem, and George E. Mussey, Tomahawk, Wis., assignors to U.S. Industries, Inc., New York, N. Y.



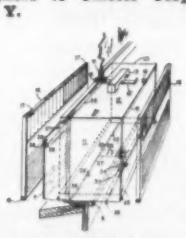
1. An apparatus of the class described comprising a storage tank, refrigerating means connected to said tank for cooling it, said refrigerating means including cooling coils mounted in said tank and a compressor, a L.P. gas engine connected to said compressor for driving it, a control circuit, said control circuit including a source of electric power and a thermoswitch, a portion of said thermoswitch comprising a temperature-sensing element mounted inside the tank, an electrical system for the L.P. gas engine, said electrical system including a starter motor connected to said L.P. gas engine. . . .

2,945,357. PORTABLE AIR CONDITIONING UNITS. David Earle MacLeod, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



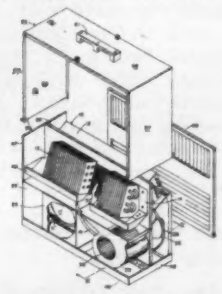
7. A portable air conditioner having a casing constructed and arranged to be reversibly mounted in a window with either the condenser chamber or the evaporator chamber thereof communicating with an area to be conditioned comprising alignment means connected to said casing and adapted to abut the rear surface of a window stool, fastening means connected to said casing and adapted to coact with said alignment means to clamp a window stool therebetween. . . .

2,945,358. AIR CONDITIONING UNIT AND MOUNTING MEANS THEREFOR. David Earle MacLeod, Syracuse, and Howard James Tyler, Salina, N. Y., assignors to Carrier Corp., Syracuse, N. Y.



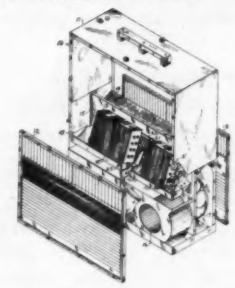
1. In an air conditioning unit having a heat dissipating condenser on one side and a heat absorbing evaporator on the other, means for mounting said unit with either the condenser or evaporator in heat exchange relation with the area to be conditioned, said means comprising means for enclosing said unit, window sash engaging means on the top of said enclosing means, window stool engaging means on the bottom of said enclosing means, said stool engaging means comprising guide means secured to said enclosing means. . . .

2,945,359. SELF-CONTAINED AIR CONDITIONING UNITS. David Earle MacLeod, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



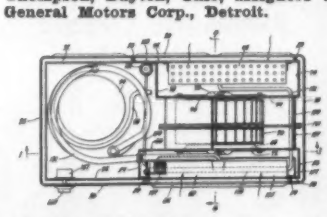
1. In an air conditioning unit, means for facilitating assembly and maintenance of the components of said unit, said means comprising a partition panel functioning to separate the conditioned atmosphere from the ambient atmosphere; a compressor secured to said partition panel; an evaporator coil mounted on said partition panel above said compressor; a condensate collection trough secured to said partition panel beneath said evaporator; a condenser secured to said panel on a face thereof opposite to that upon which said evaporator is mounted; a fan motor mounted on said panel; an evaporator fan driven by said fan motor; a condenser fan driven by said fan motor; a condenser fan driven by said fan motor. . . .

2,945,360. AIR CONDITIONING UNITS INCLUDING PILTER MOUNTING MEANS. Howard James Tyler, Salina, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



1. A filtering arrangement for filtering an air stream prior to its passage through a heat exchange element including return bend conduits having spaced fins thereon extending from the effective heat transfer surface of the conduits, said arrangement comprising filter mounting means; a filter, filter guide means secured on said mounting means and supporting and orienting the filter in position over the air entry surface of the heat exchange element; and releasing means extending between the fins of the heat exchange element for selectively releasing the filter. . . .

2,945,362. AIR CONDITIONER. Ira L. Gould, Hamilton, and Richard E. Thompson, Dayton, Ohio, assignors to General Motors Corp., Detroit.



1. Air conditioning apparatus including a casing having a first wall adapted to be exposed to outside air and a second wall on the opposite side of the casing adapted to be exposed to inside air, said first and second walls each having air inlets located substantially opposite each other, an evaporator located in series with the inlet in said second wall and a condenser located in series with the inlet in said first wall, a set of blower wheels fastened together, heat insulating means between said blower wheels. . . .

2,945,992. SEMI-CONDUCTOR DEVICE. Gerhard Fritz Bollert, Walter Otto Ramser, and Dietrich Wieland, all of Nurnberg, Germany, assignors to Eberle & Kohler, Nuraberg, Germany.

1. A semi-conductor device comprising a hermetically sealed means defining a housing having a base means and a first cap means, said first cap means being hermetically sealed to said base means, a semi-conductor body, having

WE NEED AN ENGINEER-WRITER

Really what we are after is a writing engineer—a man who is now employed at some technical or engineering task in the heating-cooling industry; a man who would be happier drawing from his own and others' knowledge and passing that information along to readers of a leading industry publication.

He likes writing and he can express complex thoughts in language understandable to general readers as well as his colleagues.

Our headquarters are in the Midwest; the writing job will call for some traveling. Send Resume, including age and years in the industry, to BOX A6656, Air Conditioning, Heating & Refrigeration News.

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RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

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POSITIONS WANTED

MANUFACTURERS' REPRESENTATIVE, professional engineer with over twelve years' successful experience servicing heating, refrigeration, air conditioning O.E.M. and wholesale trade, in Missouri, Iowa and Illinois. Can give top quality representation to one or two nationally established lines. Headquarters St. Louis, Mo. BOX A6661, Air Conditioning, Heating & Refrigeration News.

MANUFACTURER'S AGENT seeking two additional lines. Is well acquainted with O.E.M. and wholesale accounts in the St. Louis trade territory. Inventory and warehousing can be handled if required. BOX A6662, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

ENGINEER — DESIGN engineer on room air conditioners, and dehumidifiers; all phases. Good working knowledge of metals and plastics. Write to WELBILT CORP., 57-18 Flushing Avenue, Maspeth 78, New York.

SERVICEMAN TO cover Philadelphia area. Must be capable of supervision of installations, as well as emergency service of systems. Your home is your office. Send resume, salary desired, when ready to start work for a progressive organization. BOX A6646, Air Conditioning, Heating & Refrigeration News.

SALES ENGINEER to cover exclusive Philadelphia and New Jersey territory for long established manufacturers' representative handling top lines refrigeration, ammonia and Freon, air conditioning and ventilation equipment. Must have technical background and related experience, preferably under forty. Immediate high earnings against substantial base. BOX A6647, Air Conditioning, Heating & Refrigeration News.

COMMERCIAL REFRIGERATION serviceman—We are looking for a refrigeration serviceman to be the No. 2 man in our service and parts department. He must also be able to handle correspondence. Permanent position. Growth potential. Suburban Philadelphia, Pa., area. Replies confidential. BOX A6660, Air Conditioning, Heating & Refrigeration News.

WANTED—MALE Manager for wholesale refrigeration and air conditioning department. 30 miles from New York City. Established 20 years. State qualifications and salary expected. BOX A6663, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

BRUNNER COMPRESSORS—all models used and repairable. Send description of model numbers and quantity. Also need other makes used compressors and parts. Will pay cash. UNITED REFRIGERATION CORP., 514 W. 12th St., Los Angeles 15, Calif.

EQUIPMENT FOR SALE

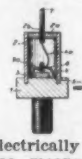
ATTENTION REFRIGERATION Servicemen. Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

NOTICE: DISTRIBUTORS, dealers, servicemen, users refrigeration equipment—repair parts available all models Baker ammonia and Freon compressors. Also models 6B and F6B ammonia compressors. We are exclusive Baker export sales office. Manufacturers' export agents refrigeration, air conditioning, and allied equipment. THE KEISER COMPANY, 7651 South Ashland Avenue, Chicago, Illinois.

BUSINESS OPPORTUNITIES

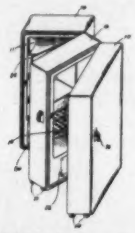
FOR SALE: Carrier air conditioning dealership and mechanical contracting firm in large mid-southern city. Completely equipped service department including 14 trucks with two-way radios. Owners must sell because of conflicting interests. Terms available. BOX A6654, Air Conditioning, Heating & Refrigeration News.

an electrode means, disposed in said housing means, an electrically conductive intermediate second cap means disposed over said semi-conductor



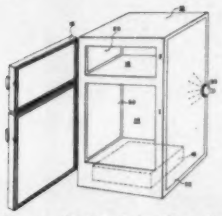
body and electrically insulatedly fixed to said base means and electrically connected to said electrode means, and means for conduction of electricity from said intermediate second cap means through said first cap means to the exterior of said hermetically sealed housing means. . . .

2,945,733. COMPARTMENTALIZED REFRIGERATOR. John P. Malia, New York, N. Y. (36 E. Division, Chicago 10, Ill.)



1. A refrigerator unit comprising the combination of at least one section and at least two movable sections, arranged face-to-face to form a sandwich having a front section, at least one middle section, and a back section; at least one of said sections containing a refrigerating unit and being capable of quick freezing. . . .

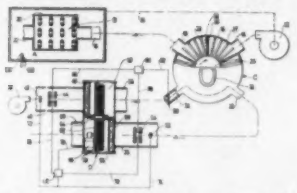
2,945,954. REFRIGERATING APPARATUS. Richard S. Gangler, Dayton, Ohio, assignor to General Motors Corp., Detroit.



2. The method of testing temperature differentials in different parts of refrigerator cabinets which comprises electrostatically adhering to the wall of a refrigerator a flexible sheet having thereon a coating of thermographic phosphorous material, directing ultraviolet light onto said thermographic material and observing the light intensity on different portions of said thermographic material. . . .

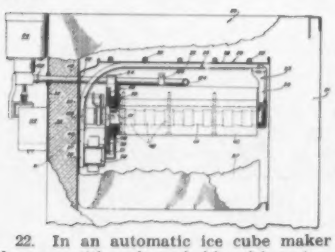
Week of July 26

2,946,201. METHOD FOR AVOIDING FROST DEPOSITS ON COOLING MEMBERS. Carl Georg Munters, Danderydsvagen 3, Stocksund, Sweden.



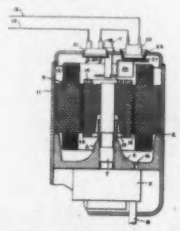
The method of preventing frost formation on cooling surfaces for a cold storage chamber in which the air has a temperature below the freezing point of water and a high relative humidity, the dew point temperature of the air being higher than the temperature of said surfaces forming part of a refrigerating system, the last-mentioned temperature being lower than said first-mentioned temperature, which comprises circulating a stream of air from the storage chamber and drying it by sorbtion in a regenerative moisture exchanger and consequent release of latent heat to thereby reduce its relative humidity to a point representing a dew point below the temperature of the cooling surfaces. . . .

2,946,202. AUTOMATIC ICE CUBE MAKING MACHINES. Walton P. Boeing, Chicago, Ill., assignor to General Electric Co., a corporation of New York.



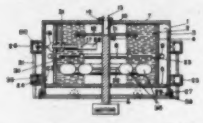
22. In an automatic ice cube maker for use with a household refrigerator, a shaft fixed in a generally horizontal position with respect to such refrigerator and being provided with a longitudinally extending passage therein, a freeze block mounted for rotation upon said shaft and providing a cavity surrounding the same, said block being provided with a freezer cup adapted to receive liquid therein, said cup being provided with a movable member defining the bottom closure thereof. . . .

2,946,203. REFRIGERANT COMPRESSOR HAVING THERMAL OVERLOAD PROTECTOR. Robert G. Carver, Louisville, Ky., assignor to General Electric Co.



In a compressor for a refrigerating system, the combination comprising a sealed casing, a compressor unit disposed within the lower portion of said casing, an electric motor including a rotor and a stator disposed in said casing above said compressor for driving said compressor unit, means for conducting low pressure refrigerant gas from the refrigerating system into said compressor unit, means for discharging compressed refrigerant gas from said compressor unit into said casing, a discharge tube for conducting compressed refrigerant gas from said casing back into said refrigerating system. . . .

2,946,204. COMBINED SALT WATER STILL AND FRESH WATER CHILLER. Donald S. Justice, Washington, D. C., assignor to The Justice Co., Washington, D. C.

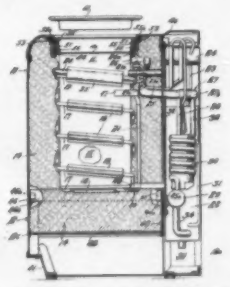


1. In apparatus for treating liquids, a first container, a second container, means for revolving the containers about an axis, means to position the second container at a greater radial distance from the axis than the first container, means for delivering liquid to be treated into the first container, conduit means communicating between the containers and having its inlet in the first container adjacent the side thereof nearest said axis, a heat transfer circuit having a heat absorbing portion within the second container and a heat dissipating portion within the first container. . . .

2,946,205. AERATING AND REFRIGERATING APPARATUS. Alden H. Wakeman, Lake Mills, Wis., assignor to The Creamery Package Mfg. Co.

2. An apparatus for aerating and refrigerating a readily solidifiable liquid wherein the line pressure downstream of said apparatus is subject to fluctuation, comprising an elongated refrigerated chamber through which such a liquid is circulated longitudinally thereof and simultaneously agitated, a first positive type pump for imparting a substantially uniform rate of flow to such liquid, a second positive type pump serially connected to the discharge side of said first pump....

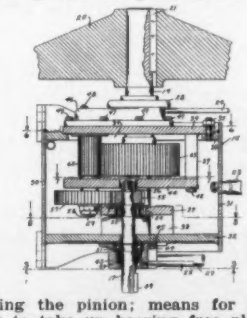
2,946,206. REFRIGERATOR EMPLOYING SECONDARY REFRIGERATION SYSTEM. Axel Gosta Hellstrom, Johanneshov, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden.



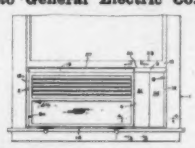
1. A refrigerator comprising a cabinet having spaced apart inner and outer shells and insulating material therebetween of which a part thereof is removable, said inner shell defining a space to be cooled, primary refrigeration apparatus comprising a cooling element disposed exteriorly of said space, a secondary heat transfer system disposed exteriorly of said space which contains a refrigerant and includes a condenser in heat exchange relation with said cooling element and an evaporator arranged to abstract heat from said space. . . .

2,946,223. COOLING TOWER FAN DRIVE. Walter P. Schmitter, Wauwatosa, Wis., assignor to The Falk Corp., Milwaukee, Wis.

A heavy duty speed reduction unit, comprising: an output shaft; a tapered-roller bearing capable of taking radial as well as thrust loads, rotatably supporting the output end of the output shaft; a similar bearing, rotatably supporting the nonoutput end of the output shaft, and oriented oppositely to the first mentioned bearing; a gear on and drivingly keyed to the output shaft; a pinion drivingly meshing with the gear; means for rotating the pinion; means for adjusting to take up bearing free play and means imposing a predominant thrust in one direction on the output shaft....

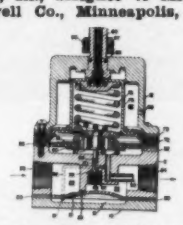


2,946,274. WINDOW CLOSURE FOR ROOM AIR CONDITIONER. Emory H. Grimes, Jr., Sellersburg, Ind., assignor to General Electric Co.



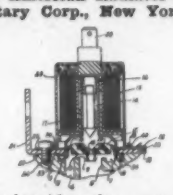
1. An adjustable window mounting arrangement for closing the space between the case of a room air conditioner and the frame of a window comprising a resilient gasket having upper and lower horizontal sections each connecting at one end with a vertical section to form a three-sided frame structure. . . .

2,946,344. PRESSURE REGULATING VALVE. Richard C. Mott, Harwood Heights, Ill., assignor to Minneapolis-Honeywell Co., Minneapolis, Minn.



1. A pressure regulator comprising, a casing having inlet and outlet means, a weir integral with said casing and positioned intermediate said inlet and outlet means, a slack diaphragm positioned within said casing and engaging with said weir to separate said inlet and outlet means and provide a chamber remote from said inlet and outlet means, aperture means in said diaphragm on said inlet side and communicating with said chamber such that inlet pressure may fill said chamber and urge the diaphragm towards said weir. . . .

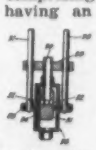
2,946,551. DETACHABLE MOUNTING FOR SOLENOID COIL. Julius William Kovach, Detroit, Mich., assignor to American Radiator & Standard Sanitary Corp., New York.



1. A solenoid valve comprising a valve housing having a flat exterior face; a first passage extending inwardly of said face; an annular passage concentric with said first passage and extending inwardly from said face to define an annular sealing surface; a diaphragm extending across said passages and having a central opening therein in registry with the first passage and another opening therein in registry with the annular passage. . . .

2,946,555. VALVE. Jacob J. Cantor, 1905 Beverly Blvd., Los Angeles, Calif.

1. A valve comprising a tubular resilient body having an inlet and an



outlet, a conduit extending into the inlet, a portion of the body having normal annular contact with the conduit, there being one or more outlets from the conduit into the body upstream of said annular contact. . . .

RACCA Convention Program--

(Continued from Page 1)

films on "Effective Salesmanship."

Major program events are listed below:

SATURDAY, NOV. 19

9:30 a.m.—Board of directors meeting—Francine Room. Yearly report of committees.

12:30 p.m.—Luncheon—board of directors—Louis Philippe Room.

6:30 p.m.—Annual reception and cocktail party—Rosewood Terrace & Room.

SUNDAY, NOV. 20

9 a.m.—Opening of convention—President Thomas C. Alexander. Voltaire Room.

9:05 a.m.—Invocation. "Welcome to Florida"—Dudley M. Cawthon, convention chairman.

9:15 a.m.—"Salute to the Supporters of the 1960 Yearbook"—Guido F. Restagno, Yearbook Chairman, Resco Refrigeration Service, Inc., Chicago.

9:25 a.m.—"Report of the Manufacturers and Wholesalers Relations Committee"—Daniel M. Brown, chairman.

9:40 a.m.—"Challenge of the Future for the Refrigeration and Air Conditioning Industry"—A. L. Ingelfinger, chief, Environmental Control Section, Flight Accessories Laboratory, Wright-Patterson Air Force Base, Dayton.

10 a.m.—"Greetings From ARW"—Air Conditioning & Refrigeration Wholesalers—W. C. Miessemer, president.

10:15 a.m.—"Some Impressions of the Air Conditioning Contracting Business In the U.S.A."—Dr. M. H. Shahani, manager, Refrigeration and Air Conditioning Div., Blue Star Engineering Co. Ltd., Bombay, India.

10:40 a.m.—"Greetings from ARI"—Air-Conditioning & Refrigeration Institute—Rudy Berg, president.

10:55 a.m.—"Greetings from MCA"—Mechanical Contractors Association—Joseph S. Kearney, Sr.

11:10 a.m.—"Greetings from NAPC"—National Association of Plumbing Contractors—Carl N. Finley, president.

11:25 a.m.—"Greetings from UA"—United Association—Peter T. Schoemann, general president; and Joseph F. Monahan, general organizer.

11:40 a.m.—"Maintenance Contracts—Door to the '60's"—L. L. Grant, president, Hill-York Service Corp., and general service manager, Hill-York Associates, Miami, Fla.

12:05 p.m.—"How To Sell Self"—Dr. E. A. Fails, executive secretary and director of research, Heating & Air Conditioning Research & Development Assn., Raleigh, N. C.

12:35 p.m.—Luncheon for the Men—Rosewood Room.

2 p.m.—Annual business meeting and election of officers—for members only.

8 p.m.—Polynesian Luau—Garden Patio.

MONDAY, NOV. 21

9 a.m.—Call to order—Dudley M. Cawthon. Voltaire Room.

9:05 a.m.—Business Management Session—Section I. By Heating & Air Conditioning Research & Development Assn. "Five Steps Up to the '60s"—H. H. Ziglar.

9:55 a.m.—"Imagination, Management and the '60s"—Dr. E. A. Fails.

11:05 a.m.—"The '60s, Records, and Pricing"—D. S. Shepherd, Jr.

11:55 a.m.—"Hermetic Trends and Service Requirements"—J. J. Floreth, vice president and director of services, York Div., Borg-Warner Corp.

1 p.m.—Luncheon. Dutch treat. RACCA of Chicago has arranged to make a special showing of a set of five films titled "Effective Salesmanship." Conducted by Chicago president—Daniel M. Brown.

7:30 p.m.—Annual Banquet—LaRonde Room. Entertainment: The Fontainebleau Show.

TUESDAY, NOV. 22.

9 a.m.—Call to order—Dudley M. Cawthon presiding. Voltaire Room.

9:05 a.m.—Business Management Session—Section II. "Imagination, Management and People"—Dr. E. A. Fails.

11:10 a.m.—"How Productive Is Productive Labor?"—D. S. Shepherd, Jr.

12 noon—Outgoing president's message—Thomas C. Alexander. Installation of new officers and directors. 1960-61 president's message.

12:30 p.m.—Adjournment of 15th annual convention.

1 p.m.—Luncheon for the new board of directors, followed by board meeting—Louis Philippe Room.

Casual living under the Sun!

Wiennie Roast & Splash Party Every Sunday Nite. Games Mon. & Fri.

FREE Pitch and Putt GOLF COURSE

SAFARI RESORT MOTEL

FREE CONTINENTAL BREAKFAST

FREE TV IN EVERY ROOM

FREE PARKING ON PREMISES

$3.50 DAILY PER PERSON DOUBLE OCCUPANCY

Above rates from Sept. 6 to Dec. 20

- Two double beds in each room
- Kitchenettes available
- 200 ft. of private beach
- A COMPLETE RESORT—near everything
- Opposite new Catholic Church
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Write or Call for Information & Reservations Mr. Walter Mann, Mgr. or call WI 7-4431

Oceanfront at 177th Street

SAFARI MOTEL MIAMI BEACH

Knoxville Sales--

(Continued from Page 37, Col. 2)

cations by these firms.

In all, 16 different makes were involved in the residential cooling installations, including heat pumps, and the same number, though not necessarily the same makes, were included in the commercial air conditioning jobs.

Distribution Methods

As for distribution methods, four contractors indicated they obtained their equipment from distributors while five dealt directly with manufacturers. This is apparently a change from the preceding year when six bought from distributors and only three bought directly from manufacturers.

Whether this change represents any significant trend is problematical, but it may reflect recent emphasis by some manufacturers on establishing of factory branches.

Advertising Media

Eight different media of advertising were employed by the Knoxville contractors and distributors surveyed with newspapers being mentioned most often—by six firms. Radio, television, and home shows were each cited three times; two firms use direct mail, while billboards, model homes, and the telephone directory received one vote each.

Some firms employ more than one type of advertising, and some reported they had done nothing along these lines.

Despite the fact that the "yellow pages" were mentioned by only one firm, all 11 of the companies involved use this form of advertising though some only to the extent of having their names listed in boldface type.

Contractors were also queried in the survey as to which sources have been most productive of sales this year.

Referrals Rate High

All nine contractors mentioned "referrals from customers," two saying that this source was by far the best one.

Leads from advertising were cited by five, personal contacts by four, bidding to specifications by three, leads from reporting services by two, personal canvassing and leads supplied by manufacturer or distributor were also mentioned, each by a different contractor.

One contractor, however, declared that leads supplied by the manufacturer or distributor are "usually no good."

So much for the statistics developed in this year's Knoxville survey. Now for some illuminating comments by contractors and distributors.

"We doubled our sales of residential air conditioning this year, and increased our commercial sales, just by working harder than ever," says the manager of one firm.

Contractors Asking More for Jobs

"There seems to be some slight evidence, too," he's also happy to say, "that contractors are asking a little more for their jobs and getting it. I don't mean there isn't competition, but there is a growing realization that they have to make a profit to stay in business," he observed.

Similar observations were made by a leading distributor, who calls the trend, if it is a trend, "a hopeful sign," but he things back also some 20 years (before the boom of electric heat in this area) when one large contractor took in more than $100,000 one year just in its furnace cleaning department alone.

"We're a very small company," commented the owner of a firm primarily engaged in heating and service. "A few years ago we installed quite a lot of air conditioning and heating, but we lost money. We're going at it more slowly now.

"Actually," the contractor explained, "we can make more money in service and repairs and in cleaning furnaces than we can in selling and installing. Air conditioning is bound to grow, though, we're sure. Also, we have observed that most people are more willing to pay for service on air conditioning —window units, residential or commercial—than for service on heating. They'll grumble about a $4 service charge on their furnace but gladly spend $15 to have their window air conditioner cleaned up," he's found.

Whether customers are any more willing to pay for service on heat pumps than on a furnace is questionable, but providing prompt service on heat pumps is of major importance, indicate Knoxville firms.

Not only must heat pump service be provided promptly but the serviceman must know what he's doing, emphasizes one contractor who has had considerable success in selling heat pumps for several years now.

Besides the matter of service, this contractor points to three other factors which he considers essential when selling heat pumps:

"First, you must have good equipment to start with; second, the individual application must be carefully engineered; third, extreme care must be used in actually installing the system. Joints in ductwork, for example, must be carefully taped."

Not only do these factors combine to provide a heat pump system that creates satisfactory conditions but they also keep operating costs at a minimum, this contractor indicates.

Despite the low power rates available in this TVA territory, the consumer still wants his electric bills kept to a minimum, and the customer who brags that his bill is only half that of a neighbor who also has a heat pump is a fine endorsement, according to this contractor.

So. California--

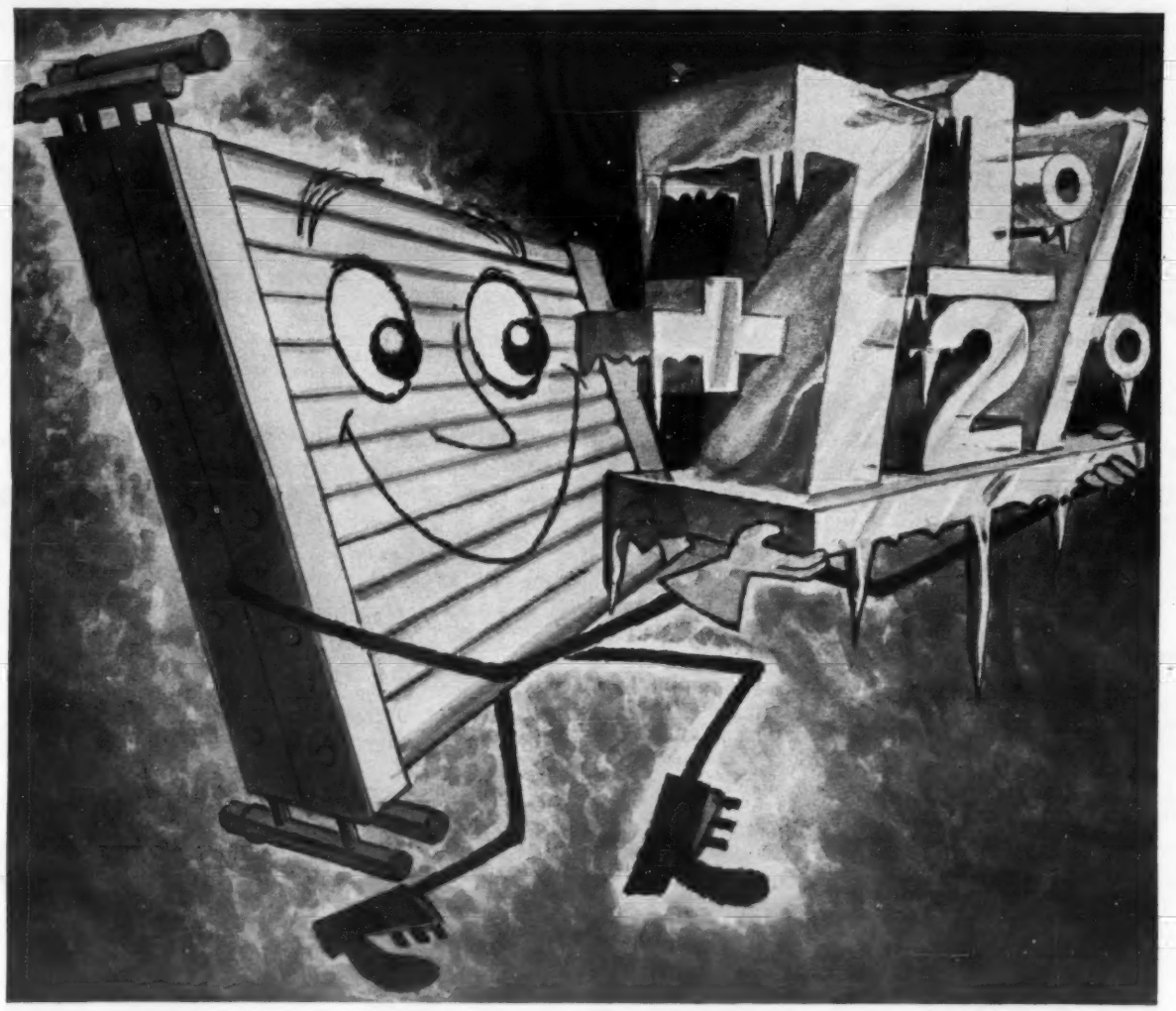
(Continued from Page 1, Col. 4)

round advantages of air conditioning urging purchase this fall to get winter benefits as well as summer benefits.

The campaign is being conducted through two daily newspapers, a builders' trade newspaper, and TV commercials.

At the same time, the division is offering business associations packaged one half hour or full hour programs on air conditioning. Billed as the "Role of Air Conditioning In Your Business," the programs are slanted toward the economic justification of air conditioning in the particular business of the group.

The division is also publishing a booklet of "Buyers' Guide for Air Conditioning and the Heat Pump" and conducting a course on "How To Sell Air Conditioning for Profit."



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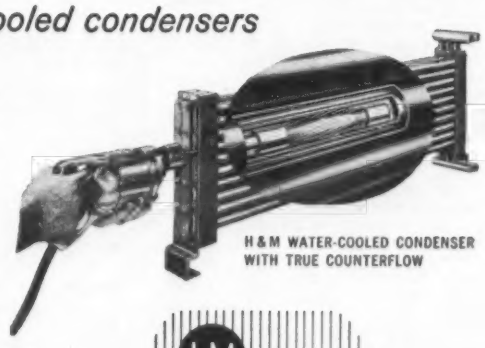
But that's not all: Halstead & Mitchell Water-Cooled Condensers have easily removable end plates for quick, safe, *mechanical* cleaning of the water passages. Scale and sludge are quickly removed so that condenser efficiency stays high; operating costs, low.

Featuring double-tube design, seamless copper tubing and brass headers, H&M condensers are available in ⅓ to 25-ton capacities. All are U/L approved, and can be used singly or in multiples on racks. Ask your H&M refrigeration wholesaler for complete information, or write Halstead & Mitchell Co., Bessemer Building, Pittsburgh 22, Pa.



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